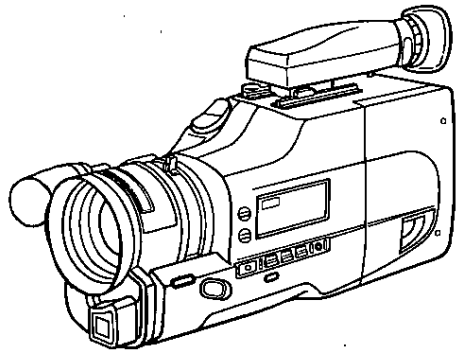
SHARP SERVICE MANUAL

SX9U7VLC670S



VHS C CAMCORDER
(PAL)

HQ HIGH QUALITY

VL-C670S/H/X
MODELS VL-C6100E

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

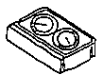
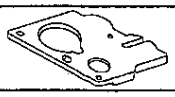
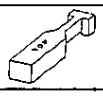
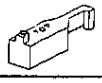
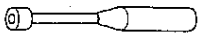
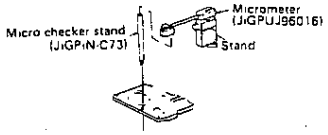
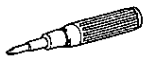
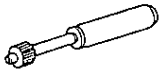
CONTENTS

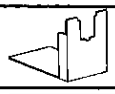
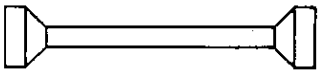
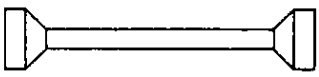
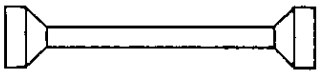
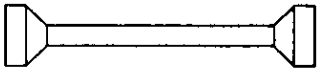
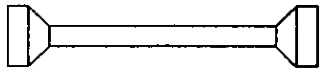
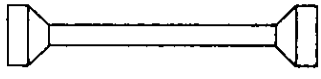
- ADJUSTMENT OF VCR MECHANISM UNIT 2
- FEATURES 5
- SPECIFICATIONS 5
- MAJOR OPERATING COMPONENTS AND THEIR FUNCTIONS 7
- DISASSEMBLY AND REASSEMBLY 17
- TROUBLESHOOTING 19
- ADJUSTMENT, REPLACEMENT, ASSEMBLY AND CLEANING OF MECHANICAL UNITS 25
- ADJUSTMENT OF ELECTRICAL CIRCUITRY 43
- DC VOLTAGE TABLE 66
- SCHEMATIC DIAGRAM, PWB BOARD etc 79
- REPLACEMENT PARTS LIST 134
- PACKING OF THE SET 164

SHARP CORPORATION

Adjustment of VCR Mechanism Unit

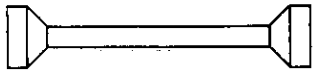
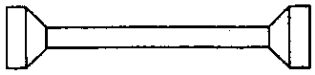
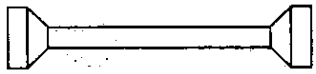
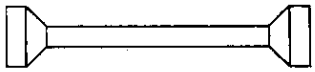
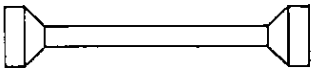
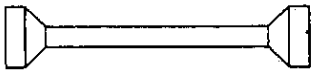
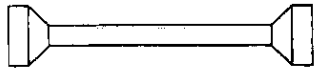
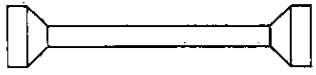
Note: N indicates the new jigs.

No.	Jig Item		Parts Code	Price Code	Configuration	
1-1	Torque Cassette (for PB)		JIGCTM0020P	CV		
1-2	Torque Cassette (for V/S-R)		JIGVHC032	CV		
2	Torque Gauge (90g.cm)		JIGTG0090	CM		
3	Torque Gauge Head		JIGTH0006	AW		
4	Tape Guide Adjusting Screw Driver		JIGDRIVER-8	AW		
5	Master Plane		JIGMP-C73	BZ		
6	Short Connector		QCNW-4000GEZZ	AD		
7	Hexagon Wrench (1.5mm)		JIGHW0015	AE		
8	Alignment Cassett Tape		VR1HPSV	CG		
9-1	Height Adjusting Jigs A		JIGGH-C73	BS		
9-2	Height Adjusting Jigs B		JIGACH-C73	BV		
10	Box Driver	3mm	JIGDRIVER-46-3	AH		
		4.5mm	JIGDRIVERN8645	AM		
11-1	Micrometer		JIGPUJ96016	CR		
11-2	Micro checker Stand		JIGPUJ94195	CA		
11-3	Stand Pin		JIGPIN-C73	AY		
12	Torque Measuring Jig		JIGTS0020P	BP		
13	tension Gauge (300g.cm)		JIGSG0300	BF		
14	Torque Driver		JIGTD0200	CA		
15	Gear Type Driver		JIGDRIVER-6	BM		

No.	Jig Item	Parts Code	Price Code	Configuration	Note
1	Camera Stand	JIGSTAND-C70	BQ		
2	Gray Scale Chart (390x520mm)	JIGCHART-1	CL		
3	White Pattern Chart (390x520mm)	JIGCHART-2	CG		
4	Color Bar Chart (240x520mm)	JIGCHART-4	CV		
5	Tracking Driver	JIGDRIVER-11	BR		
6	Solder Containing Silver (For chip parts service)	JIGHANDA-S256	BP		
7	Illuminometer (0~3000Lux)	JIGMETER-1	CT		
8	Color Thermometer (1600~400000°K)	JIGMETER-2	**		
9	A/F Adjustment Chart	JIGCHART-C70	BT		
10	Color Temperature Conversion Filter	KODAK WRATTEN 80B	—		
11	Siemens Star Chart (Master Lens Adjustment Cahrt)	JIGCHART-11	CE		
12	Extension Wire (Camera KD Connector)	QCNW-0901TAZZ	AP		
13	Extension Wire (Camera Power Unit)	QCNW-0902TAZZ	AS		
14	Extension Wire (Camera LD Connector)	QCNW-0903TAZZ	AS		
15	Extension Wire (SSG Encorder)	QCNW-0898TAZZ	BE		
16	Extension Wire (Signal Encorder 1)	QCNW-0899TAZZ	AS		
17	Extension Wire (Signal Encorder 2)	QCNW-0900TAZZ	AP		

Note: 1. You may use normal solder but in order to maintain the performance of PWB, we recommend to use the solder containing silver (jig item No. 6) when replacing the chip parts.
2. Color temperature convertion filter (jig item No. 10) may be obtained from Eastman Kodak Company in your local market.

Note: N indicates the new jigs.

No.	Jig Item	Parts Code	Price Code	Configuration	Note
1	Extension Wire (AL ↔ IA) Main PWB ↔ Mech Drive	QCNW-4406GEZZ	AV		
2	Extension Wire (AQ ↔ KB) Main PWB ↔ Y/C PWB	QCNW-5698GEZZ	AP		
3	Extension Wire (AP ↔ KC) Main PWB ↔ Y/C PWB	QCNW-5699GEZZ	AS		
4	Extension Wire (AR ↔ KA) Main PWB ↔ Y/C PWB	QCNW-5700GEZZ	AY		
5	Extension Wire (AE ↔ BD) Main PWB ↔ H/A PWB	QCNW-5701GEZZ	AW		
6	Extension Wire (AM ↔ LA) Main PWB ↔ Mecha	QCNW-5702GEZZ	AK		
7	Extension Wire (AJ ↔ LD) Main PWB ↔ Mecha	QCNW-5703GEZZ	AP		
8	Extension Wire (AK ↔ Mecha) Main PWB ↔ Full Erase	QCNW-5704GEZZ	AK		
9	Extension Wire (AH ↔ DA) Main PWB ↔ Power Unit	QCNW-5705GEZZ	AP		

FEATURES

1. Ultra-compact and ultra-light: a mere 3.0 lbs (1.36kg)
2. Maximum of 60 minutes recording time in LP mode
3. 1/2" CCD Image Sensor with F1.6, 8X variable speed zoom with macrofocus
4. One-Touch Sure Auto Camera Recording System
   - Automatic Focus, Iris, and White Balance
   - Battery Alarm, Tape-end Alarm, Dew Indicator in LCD Display
5. 1/1000 High Speed Electronic Shutter for blur-free still images
5. Self-timer for Camera Recording
7. HQ(High Quality) picture
8. 3-way power source with AC, battery and car battery

SPECIFICATIONS

Format	VHS standard
Power source	DC9.6V
Power consumption	8.5W
Signal system	PAL-type
Recording system	Luminance: FM recording(FM carrier 3.8MHz) Color: Low frequency converted direct recording Conforms to VHS standard
Cassette	VHS-C cassette
Tape speed (SP)	23.39mm/sec
(LP)	11.69mm/sec
Recording time (Max.)(SP)	30 minutes (with EC-30 cassette)
(LP)	60 minutes(with EC-30 cassette)
Video Output	1.0Vp-p, 75ohms, unbalanced(via A/V out connector)
S/N ratio	45dB(with Rohde & Schwarz noise meter)
Audio output	- 8dBs,1kohm(via A/V out connector)
Microphone input	-65dBs, high impedance,unbalanced
Pickup	1/2"-format CCD
Minimum required illumination	9 lux(at f 1.6)
Lens	f1.6, f = 8.5-68mm, 8:1 power zoom lens with auto iris control and macro position, filter diameter 46 mm
Viewfinder	Electronic viewfinder with 0.7" black/white CRT
Color temperature switching	Switchable
White balance adjustment	Full-auto/preset standard
Operating temperature	0°C to 40°C
Operating humidity	Less than 80%
Storage temperature	-20°C to 60°C
Weight	1.36kg (with viewfinder)
Dimensions	131(W) x 157(H) x 280(D)mm (incl. viewfinder)

AC ADAPTOR SPECIFICATIONS

Power requirement	AC110~ 240V (50/ 60Hz)
Power consumption	27W
Rated output voltage	DC 9.6V
Rated output current	1.2A
Charging system	Constant current, peak detection, timer controlled
Dimensions	68(W) x 42(H) x 146(D)mm
Weight	Approx. 400 g

VR-72CA SPECIFICATIONS

Type	VHS cassette adaptor
Dimensions	188(W) x 25(H) x 104(D)mm
Weight	235 g
Accessory	"AA" size battery x 1

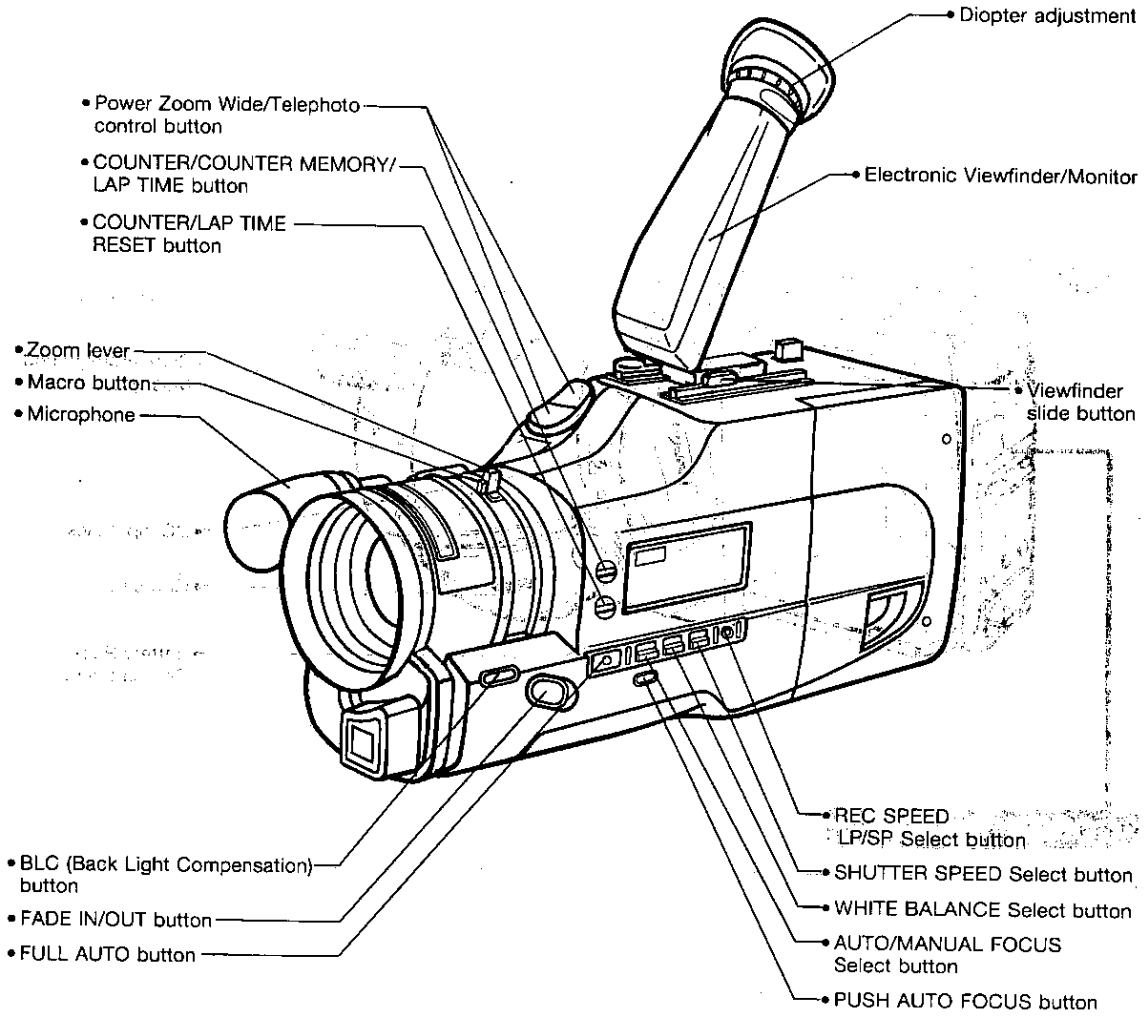
RF CONVERTOR SPECIFICATIONS (VL-C670X, VL-C6100E)

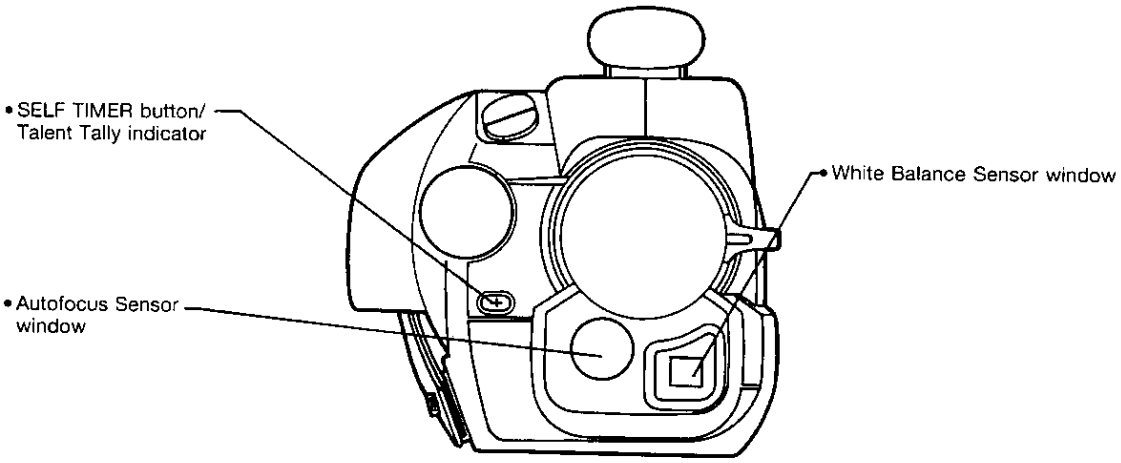
Output channel	channel 0 or 1 (VL-C670X)/30 or 39 (VL-C6100E)
Initial setting	channel 0 (VL-C670X)/36 (VL-C6100E)
Broadcast system	CCIR B (VL-C670X)/G (VL-C6100E)
Initial setting	CCIR B (VL-C670X)/G (VL-C6100E)
Power source	DC 9.6V - 45 mA (from CAMCORDER)
Dimensions	2-3/4"(W) x 3-1/32"(H) x 3-5/32(D) (70(W) x 24(H) x 80(D) mm) (excl, cable)
Cable length	70-7/8"(1.8 m)
Weight	Approx. 0.35 lb (160 g)

Design and specifications are subject to change without notice.

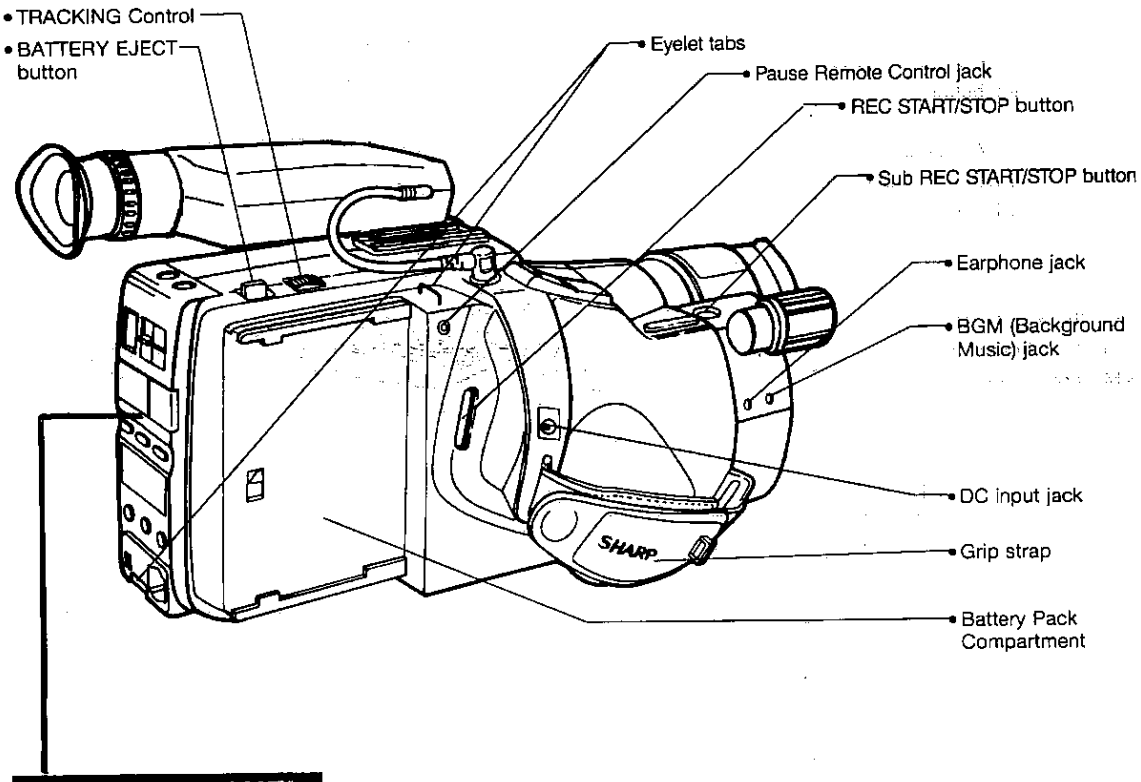
MAJOR OPERATING COMPONENTS AND THEIR FUNCTIONS

FRONT VIEW

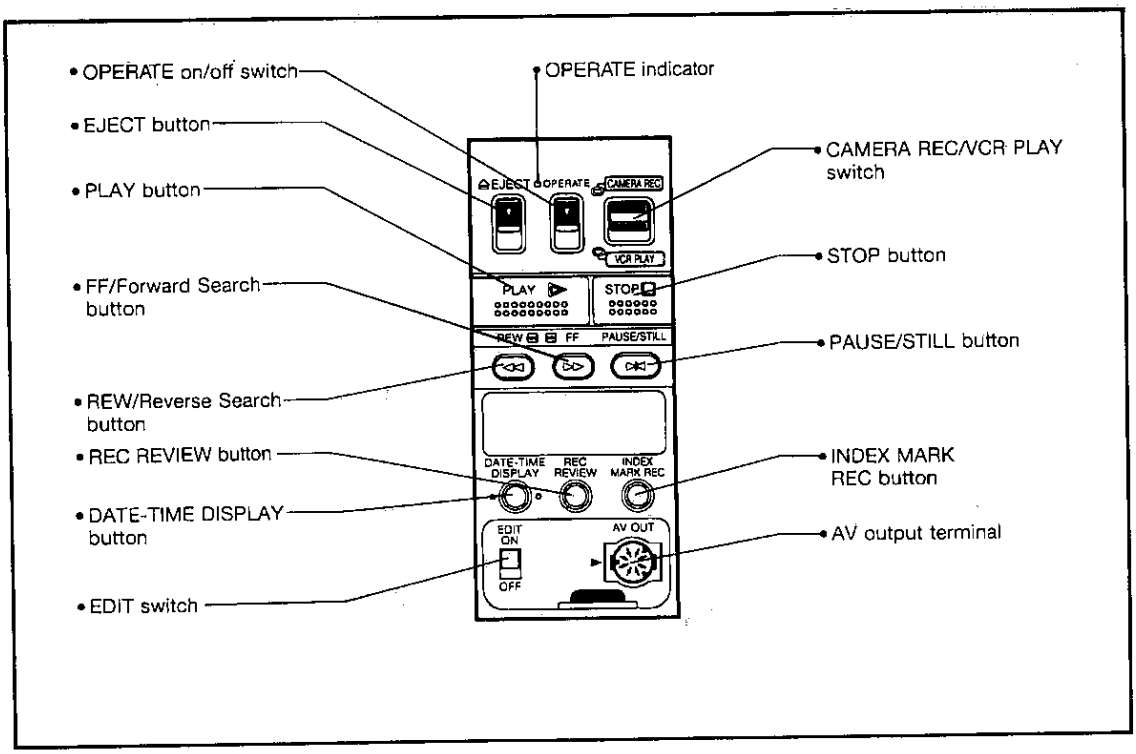

• Diopter adjustment
• Power Zoom Wide/Telephoto control button
• COUNTER/COUNTER MEMORY/ LAP TIME button
• COUNTER/LAP TIME RESET button
• Electronic Viewfinder/Monitor
• Zoom lever
• Macro button
• Microphone
• Viewfinder slide button
• REC SPEED LP/SP Select button
• SHUTTER SPEED Select button
• WHITE BALANCE Select button
• AUTO/MANUAL FOCUS Select button
• PUSH AUTO FOCUS button
• BLC (Back Light Compensation) button
• FADE IN/OUT button
• FULL AUTO button



REAR VIEW



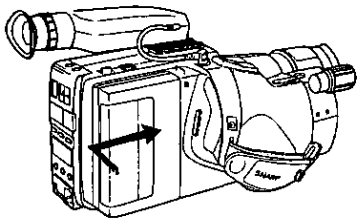
CONTROL PANEL



CAMERA RECORDING

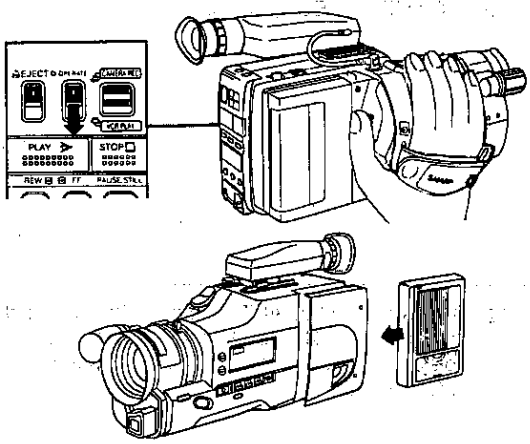
CAMERA RECORDING

1 Attach the recharged battery pack.
However, use the supplied AC adaptor for indoor camera recording or an optional Sharp car battery adaptor/charger for recording in a car.

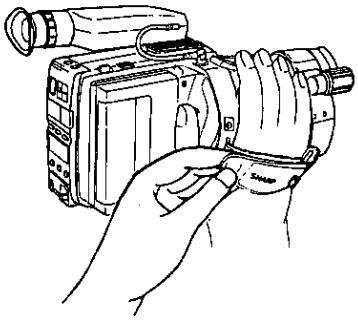


2 Slide the OPERATE switch on — the operate indicator will light.
Press the EJECT button and open the cassette holder. Insert a VHS video cassette with its tab intact and with its window facing outward.

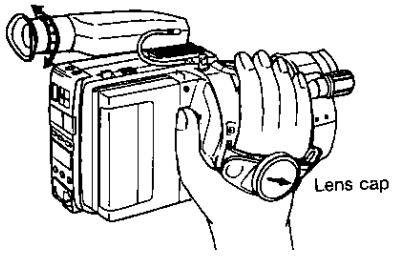
Caution:
Before inserting the video cassette, be sure to check that the tape is not slack.



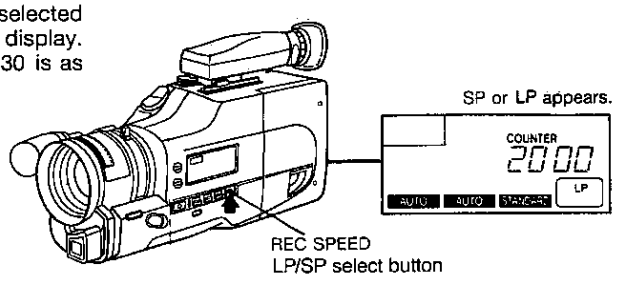
3 Position your hand properly to allow your fingers to press the REC START/STOP button and Power Zoom button. Then adjust the grip strap to suit your hand.



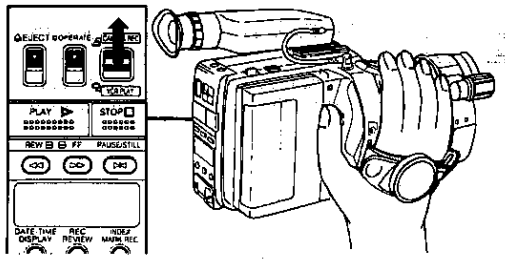
4 Remove the lens cap and secure it to the grip band. Then aim the camera at a solid colour subject (the sky or a white wall) and adjust the diopter adjustment so the display in the viewfinder becomes clear.



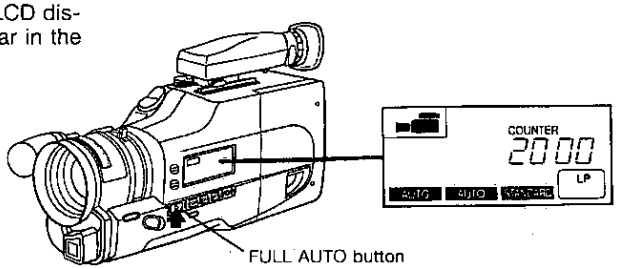
5 Press the REC Speed LP/SP select button and set the recording time. This causes the selected recording mode to appear in the LCD display. Recording time on the VHS C tape EC-30 is as follows.
SP mode: 30 minutes
LP mode: 60 minutes



6 Set the CAMERA REC/VCR PLAY switch to "CAMERA REC" position.

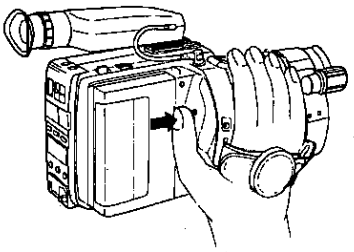


7 Press the FULL AUTO button. Check that this causes the mark to appear in the LCD display. If not, an alarm indicator will appear in the LCD display.



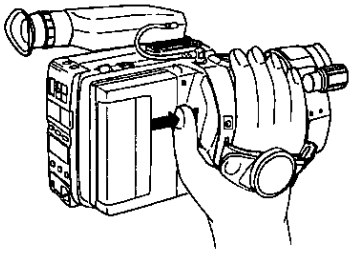
8 Press the REC START/STOP button. While recording, "»»»" in the viewfinder moves in sequence from left to right.

Note:
If recording for an extended period of time, the handgrip may become hot. However, this does not indicate malfunction.



9 When you wish to finish recording, press the REC START/STOP button once again.

Note:
If the Camcorder is in the REC PAUSE mode for more than 5 minutes, it will switch itself off. To restart recording just slide the OPERATE switch to ON.



PLAYBACK

The VL-C670 can playback VHS-C cassettes you have recorded.
They can be played back on the viewfinder or a TV.

PLAYBACK IN THE VIEWFINDER

1 Attach a Battery Pack or use the AC Adaptor/ Battery Charger.

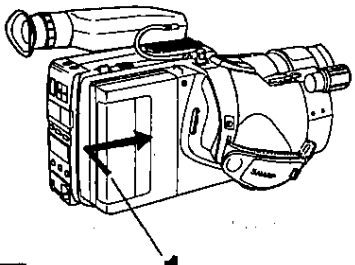
2 Slide the OPERATE switch on — the OPERATE indicator will light.

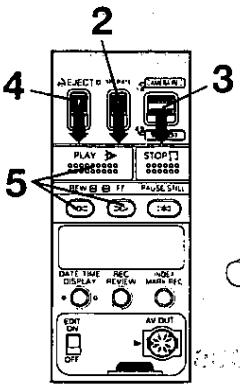
3 Slide the CAMERA REC/VCR PLAY switch to the "VCR PLAY" position.

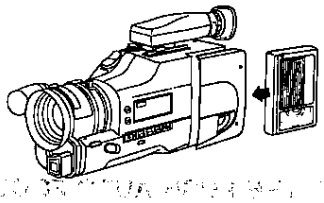
4 Press the EJECT button and insert a video cassette.

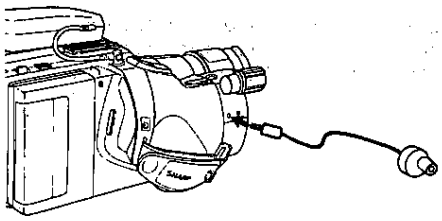
Note:
Remove any tape slack first.

5 Cue the tape to the scene you want to watch by pressing the FF or the REW button. Then press the PLAY button.
The PLAY indicator will light and playback starts.







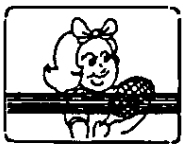


Note:
If you also want to listen to the sound of your recording, attach earphones (not supplied) to the EAR jack.

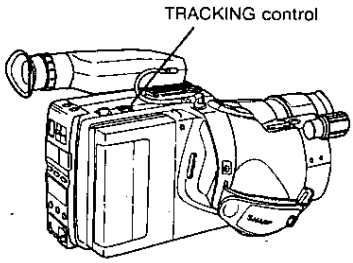
Note:
The LP/SP select button may be in either mode. The recording speed is automatically sensed and the tape is played back at the correct speed.

TRACKING ADJUSTMENT

If noise bars are visible, adjust the TRACKING control. Turn it slowly in either direction to reduce the picture noise. After playback, return the TRACKING control to the centre indent position.


Visual "Noise"

Clear



ADVANCED OPERATION

MANUAL FOCUS

In the following cases, it may be difficult to use the Autofocus, so you might want to focus the lens yourself.
1. When the object is not in the middle of the scene.
2. When you want the background or the front of the scene blurred.
3. When you want to have the beginning of the scene out-of-focus.

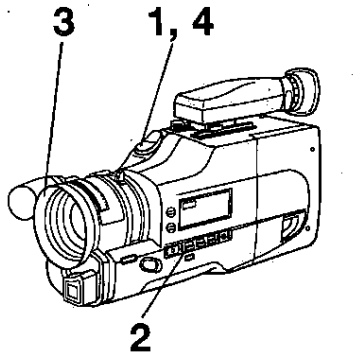
USING THE MANUAL FOCUS

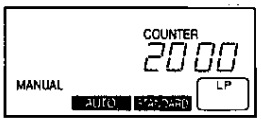
1 Press T to zoom in on your subject.

2 Press the FOCUS button to select MANUAL FOCUS.

3 Turn the focus ring until the subject is focused.

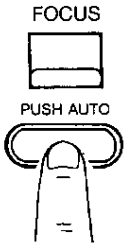
4 Lightly press W and zoom out to compose the scene.





USING THE PUSH AUTO FOCUS

PUSH AUTO FOCUS is for focusing on a subject in the middle of the scene when in the MANUAL FOCUS mode.
Press PUSH AUTO FOCUS and the Camcorder will automatically focus on the subject in the centre of the viewfinder. After releasing the button, the Camcorder will automatically return to the MANUAL FOCUS mode.



WHITE BALANCE

The human eye can always see white correctly, but the Camcorder sees it differently depending on the light source. White balance ensures that the correct whiteness is recorded. Normally, just set the WHITE BALANCE to AUTO and you will get the proper white balance. However, in the following cases white balance should be adjusted manually.

Under the following conditions Auto White Balance may not function correctly.
- When mixing natural and artifical light. Beware of window scenes containing a mixture of artificial and natural light. Likewise all lighting should have the same colour temperature.
- When using special effects lighting.
- When recording a subject against a background with an intense hue.
- When there is insufficient light.
- When the colour temperature of a scene changes too rapidly or there is too much contrast.

In normal shooting, set the WHITE BALANCE select button to the "AUTO" position. If the colour is difficult to adjust when in the normal position, set the WHITE BALANCE select button according to the light source, as shown below.

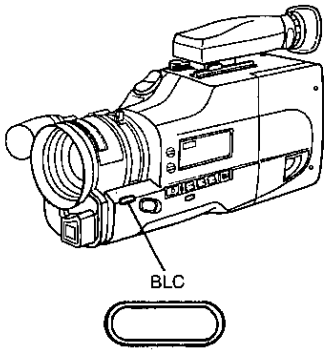
WHITE BALANCE POSITION	LOCATION	CONDITIONS
☀	Outdoor	Fair, sunny weather
▭	Indoor	Fluorescent lighting (4200°K)
☼		Halogen/Tungsten lighting

Note:
The fluorescent lighting position is fixed into the "white fluorescent light (4200°K)" colour temperature.

BACKLIGHT COMPENSATION

This Camcorder has Auto Iris which automatically adjusts to the light. However if the subject is backlit, the subject may appear dark.
In this case, you can prevent the subject from appearing dark by pressing the BLC (Backlight Compensation) button.

Note:
The Camcorder will automatically return to the AUTO IRIS mode after you release the BLC button.



HIGH SPEED SHUTTER

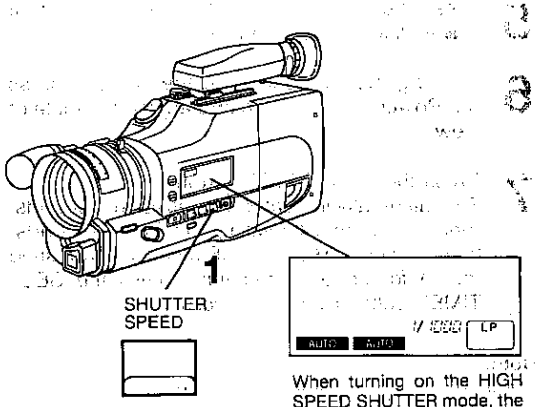
Use the HIGH SPEED SHUTTER (1/1000 sec.) mode when recording fast moving objects like sports (tennis, golf, etc.). When you playback the scene on a 4-head VCR, the playback picture will be clear even in the STILL and SLOW modes.

USING THE HIGH SPEED SHUTTER

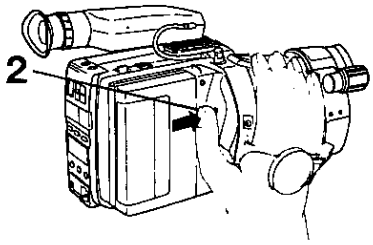
1 With REC PAUSE on, press the SHUTTER SPEED select button until "1/1000" is displayed.

2 Press the REC START/STOP button to start recording as normal.
Since High Speed Shutter is faster (by four f-stops) than normal, it requires more light. Use High Speed Shutter in good light, with minimum lighting of 300 lux, such as outdoors.

Note:
Avoid using High Speed Shutter under fluorescent lighting as this will cause flickering in the picture.



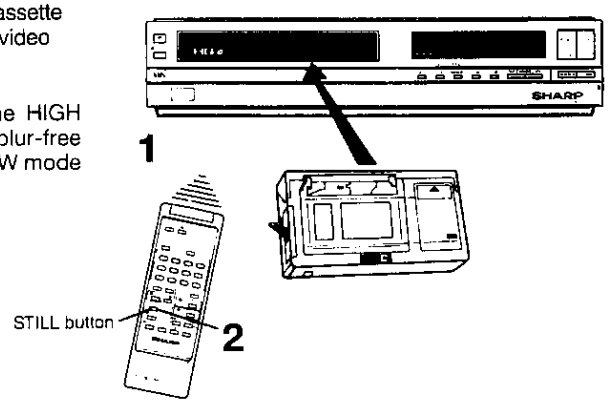
When turning on the HIGH SPEED SHUTTER mode, the LCD will show "1/1000".



PLAYBACK OF SCENES RECORDED WITH THE HIGH SPEED SHUTTER MODE

1 Place the recorded tape into the VHS cassette adaptor and then into a VHS 4-head video cassette recorder.

2 When watching scenes taken with the HIGH SPEED SHUTTER you can enjoy blur-free recordings even during STILL and SLOW mode playback.



SELF TIMER RECORDING

1 Attach the battery pack.

2 Press the EJECT button and open the cassette holder. Insert a video cassette with its tab intact with its window facing outward.
Press the corner of the cassette holder marked "PUSH" until it clicks into place.

3 Mount this Camcorder on a stable tripod designed for video use, then slide the OPERATE switch on.

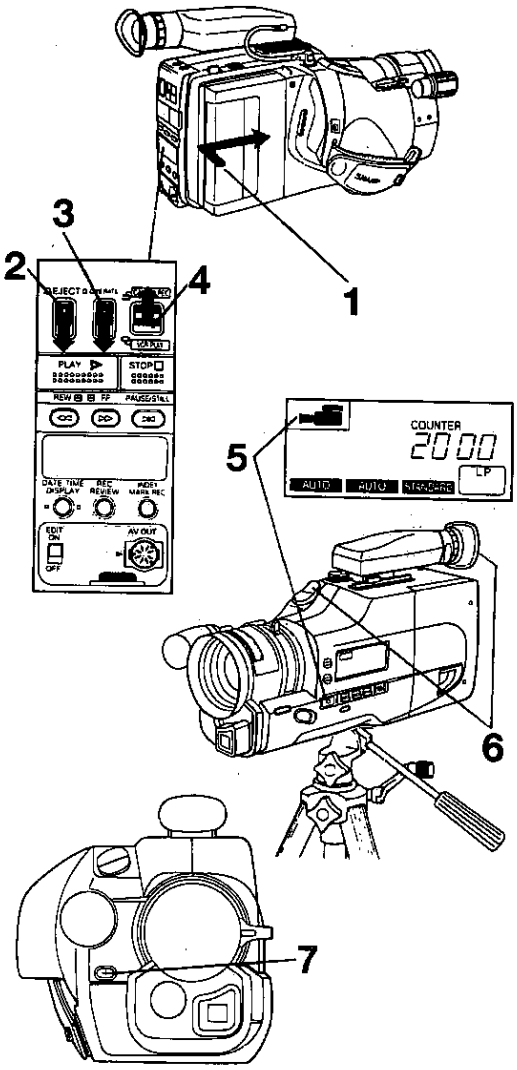
4 Set the CAMERA REC/VCR PLAY switch to the "CAMERA REC" position.

5 Press the FULL AUTO button, and check that is displayed in the LCD.

6 Pointing the Camcorder at the subject, press the Power Zoom button and adjust the angle of view.

7 Press the SELF TIMER button.
The talent tally indicator flashes for 10 seconds, then the Camcorder will record for 20 seconds, then change to REC PAUSE mode. If you wish to record for an extended time, press the SELF TIMER button twice in succession.

Note:
If you press the SELF TIMER button three times, the SELF TIMER is released.



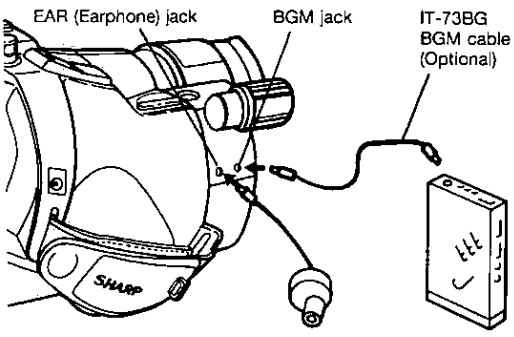
BGM RECORDING

The optional IT-73BG BGM (Back Ground Music) cable lets you add music or record a commentary on the audio track. Monitor the volume of the audio with an earphone to check the volume. When recording from a stereo source, use a stereo-to-mono adaptor.

1 Plug the BGM cable into the BGM jack on the Camcorder and connect the other end to the headphone/output jack of an audio source (ie. cassette tape player).

2 Plug an earphone into the Earphone jack and adjust the volume of the audio source.

3 Start the playback of the audio source so the audio will be recorded.



MACRO SHOTS

Small plants, insects, even photos in the family album can be recorded using Macro and enlarged to fill the screen. You can also use Macro to record titles for your videos.

Normally the lens can only focus on subjects that are more than 1m away from the front of the Camcorder.

By setting the lens to Macro, you can manually focus on any subject within the macro range, 8mm-100cm, right up to the front of the lens.

Mount the Camcorder on a steady tripod as the smallest movement is magnified when shooting macro subjects.

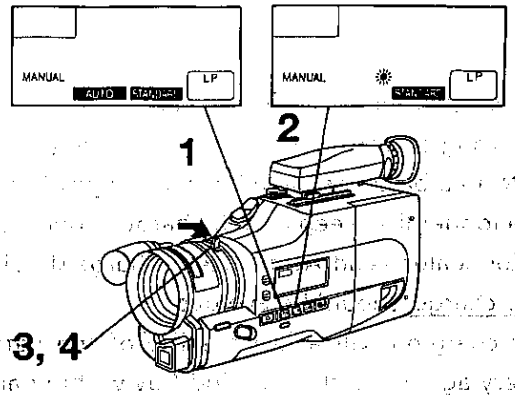
1 Set the FOCUS button to MANUAL.

2 Set the WHITE BALANCE button to ☀ or ☁ or ☼ depending on the incident light.

3 Hold the MACRO button down and turn and lock the zoom lever in the MACRO position.

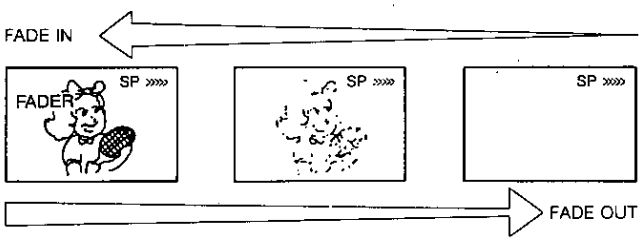
4 Focus by slowly turning the zoom lever.

Note:
Turn the zoom lever back to the normal focus range when you have finished with Macro.



FADE IN & OUT

With this Camcorder you can enjoy the special effect of fading in and out of the scenes in your recordings.



FADE IN

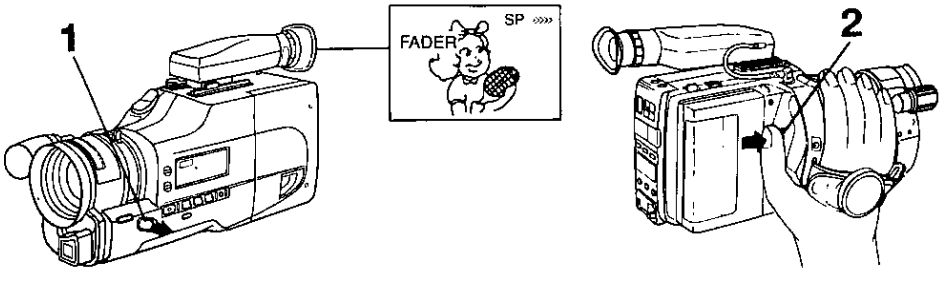
1 With REC PAUSE on, press the FADE IN/OUT button in the direction of the arrow. The viewfinder will display "FADER".

2 Press the REC START/STOP button to start recording. The viewfinder will turn white, and then gradually focus on the subject.

FADE OUT

1 While recording, press the FADE IN/OUT button in the direction of the arrow. The viewfinder will display "FADER".

2 Press the REC START/STOP button. The viewfinder will slowly turn white creating a fade-out of the scene.
(If you set to the REC PAUSE mode, the FADE will be released.)



Handling of Ni-Cad battery

Please be noted that two types of battery are used in our CAMCORDER, and each of them should be handled in a different manner respectively: One is Ni-Cad battery employed in this model (and the other is conventional Sealed Lead-Acid battery).

1. Storage

(1) The battery should be stored in normal room temperature and humidity.It will have a shorter life if it is placed and stored in high or low temperature.

(2) Ni-Cad battery should be stored in discharged condition.
(On the contrary, Sealed Lead-Acid battery should be stored in full-charged condition.)

2. Charging

(1) Battery charger must be a genuine one.
If a wrong charger is used, the electrodes (+ and -) will be damaged.

(2) This Ni-Cad battery should be charged just before use.
For a longer life, keep it in discharged condition and charge it just before use.
(As for Sealed Lead-Acid battery, charge should be done periodically.)

(3) Over charge should be avoided.
Over charging will affect the life of the battery. Attempting to charge a full-charged battery again in a short period (say within half a day) may result in an overcharge, causing a shorter life of the battery.

(4) Charging in a hot place should be avoided.
As it will affect the life of the battery, charging should be done in a cool place.
If it is charged in a hot place, the battery may have abnormally high temperature, causing a shorter life of it.

Protect your environment.
Batteries must not be thrown into household waste; they need a special treatment.

Der Umwelt zuliebe!
Batterien dürfen nicht mit den Siedlungsabfällen entsorgt werden, sondern verlangen Sonderbehandlung.

Pensez à votre environement!
Ne pas jeter les piles avec les ordures ménagères, exige un traitement spécial.

DISASSEMBLY AND REASSEMBLY

1. Removal of External Devices

1-1 Removal of Electronic Viewfinder

As shown in Figs. 1-1-a and b, remove 8-pin connector. Set viewfinder to normal position. Pushing slide button on the side of viewfinder in the direction of arrow mark A, slide viewfinder in the direction of arrow mark B. Viewfinder is detached from main body.

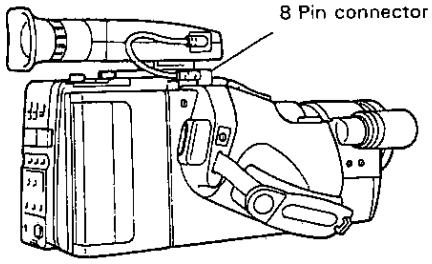


Figure. 1-1-a

1-2 Removal of Viewfinder Shoe

As shown in Fig. 1-2, with a tool like a bladed screwdriver, pull up the rear side of shoe spring in the direction of arrow mark A, (at this time the claw engaged in shoe is detached) and move it in the direction of arrow mark B. Shoe spring is detached.

Next, remove four screws (1) fixing viewfinder shoe. Viewfinder shoe is detached.

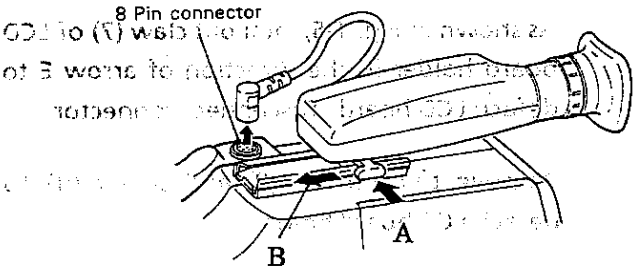


Figure. 1-1-b

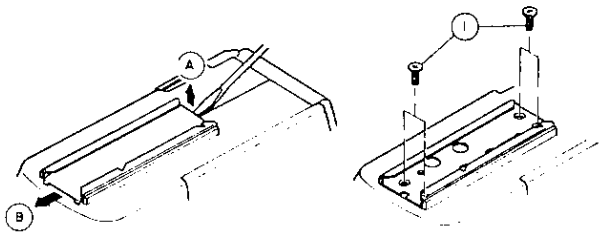


Figure. 1-2

1-3 Removal of Cassette Holder Lid

As shown in Fig. 1-3, remove two screws (2) fixing cassette holder lid. Then lift up cassette holder lid in the direction of arrow mark C. Cassette lid is detached.

If it is hard to remove cassette holder lid caused by Cabinet A, turn on the power and press EJECT button to open cassette holder for easy removal.

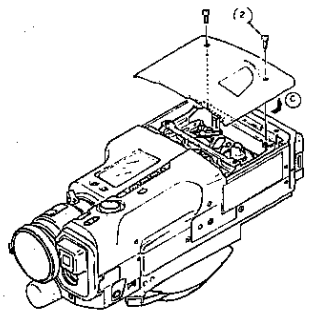


Figure. 1-3

1-4 Removal of Cabinet A

As shown in Fig. 1-4, remove screw (3), three screws (4), screw (5) and screw (6). Open the Cabinet A in the direction of arrow mark D. Then, by disconnecting connectors, Cabinet A is detached.

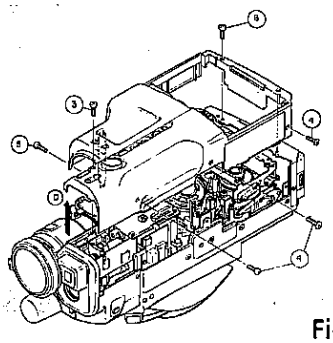


Figure. 1-4

1-5 Removal of Deck

As shown in Fig. 1-5, pull out claw (7) of LCD board holder in the direction of arrow E to detach LCD board. Disconnect connector.

Remove two screws (8) and screw (9) to detach LCD board holder.

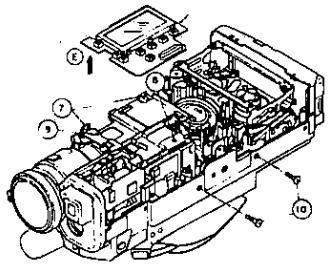


Figure. 1-5

Next, remove two screws (10) and detach tripod.

As shown in Fig. 1-6, remove three screws (11) fixing VCR unit. And remove three screws (12) fixing operation panel.

Lift up the deck.

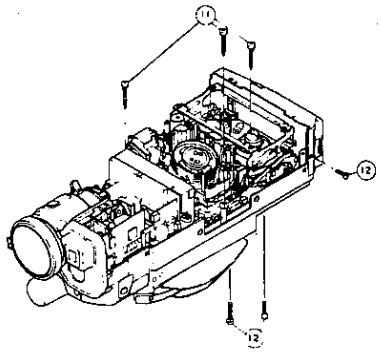


Figure. 1-6

With the deck lifted up slightly, disconnect connectors, so that the deck and operation panel can be detached from the camera. (see Fig.1-7)

1-6 Removal of Cabinet B

Remove three screws (13), two screws (14) and screw (15) fixing Cabinet B and Lens. Then by disconnecting connector, the camera is detached from the cabinet.

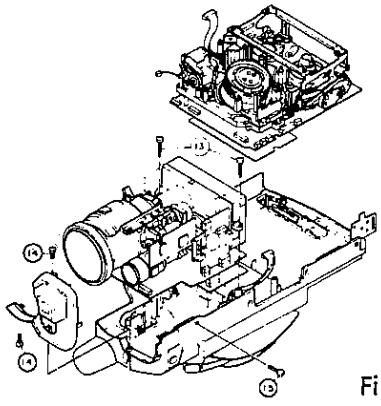
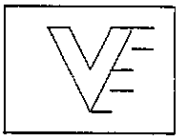


Figure. 1-7

	TROUBLESHOOTING	
	Poor Picture	
No.	Symptoms	Possible causes
1.	No picture at Camera mode EE	Is camera Y signal applied to pin 3 of connector KD and camera C signal to pin 1?
		Is camera Y signal applied to pin 46 of IC201?
		Does camera Y signal appear at pin 42 of IC201?
		Is voltage at each pin of IC202 normal?
		Is voltage at each pin of IC203 normal?
		Does camera C signal appear at pin 7 of IC203?
		Is "L" applied to pin 2 of IC203?
	at Alignment tape PB	Check that EE picture comes out.
		Does PBFM signal appear at 9 pin of connector AE?
		Is PB FM signal applied to pin 19 of IC201?
		Does PB video signal appear at pin 27 of IC201?
		Is FM signal played back by pin 41 of IC301?
		Is video head clogged or defective?
		Is IC301 defective?
	at Self REC/ PB	Check that abovementionded EE and standard tape is played back.
		Does REC FM signal come out of pin 18 of IC201?
		Does REC FM signal appear between head amps TP301 and TP302 at REC?

No.	Symptoms	Possible causes
2.	Chroma System at Alignment tape PB	Does chroma signal appear at pin 24 of IC501? Does chroma signal appear at pin 30 of IC501? Is voltage at each pin of I C501 normal?
	at Self REC/PB	Check that alignment tape is played back. Does chroma signal appear at pin 16 of IC501 at REC?
3.	Picture collapses at Self REC/PB.  Black	Is head amp defective? Is clip level misadjusted? (White, Dark)
4.	Noise appears on whole picture at Self REC/PB.	Is head amp defective? Is head clogged? Is tracking control is in center click position?
5.	No REC characters recorded.	Is viewfinder connected? Does Y signal character mixed appear at TP206 ?

GUIDE FOR SERVICING

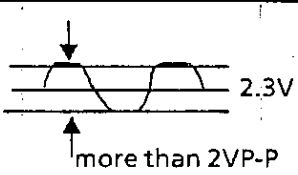
Servo Section

No.	Symptoms	Possible causes
1.	Tape runs wild at PB or REC.	(1) CAP FG is not applied to pin 24 of IC701. → Does FG appear at pin 24 of IC701?
2.	Tape does not run at PB or REC.	(1) CAP Lock is distorted. → Check pulse duty at pin 36 of IC701.
3.	Noise appears periodically on PB picture.	(1) CAP Lock is unlatched. → Check pulse duty at pin 36 of IC701. (2) Does PB CTL signal come out? → Check pin 26 of IC701 (TP702)
4.	Picture flows horizontally	(1) Does Drum FG signal come out? → Check pin 3 of IC701. (2) Is Drum PG signal normal? → Check pin 9 of IC702.
5.	Neither Drum nor Capstan turns at PB or REC.	Does reference signal 4.43MHz come out? → Check pin 40 of IC701.

AUDIO TROUBLESHOOTING

No.	Symptoms	Possible causes
1.	No sound at PB	Audio head is defective. Does PB audio signal go into IC6600 and come out of pin 8?
2.	Sound distorted	Head is magnetized or damaged. Distortion of bias current-value.
3.	Low sensitivity at REC/PB	Audio head is magnetized or defective. Bias oscillator ciruict is defective.
4.	No recording	Bias circuit does not operate.
5.	Too much hum and noise	Head is defective.
6.	Mic input absent	Harness Cable from Microphone is disconnected.
7.	BGM input absent	Harness cable from Lithium PWB is disconnected.

Indication of Malfunction

No.	Indications	Possible Causes	Checkpoints	Normal Waveform and Voltage
1.	E007	At pin 16 of IC801 Cap FG absent during REC REVIEW and EDITING	Pin 16 of IC801	DC5V
2.	E011	No mode shift after loading motor turns in loading direction for 5 minutes.	Pin 6 of IC801	Voltage changes every mode shift.
3.	E012	No mode shift after loading motor turns in unloading direction for 5 minutes.	Same as above	Same as above
4.	E020	H. SW.P input absent	Pin 19 of IC801	DC5V
5.	E025	TU. REEL sensor input absent	Pin 11 of IC801	 2.3V more than 2VP-P
6.	E026	SUP REEL sensor input absent	Pin 10 of IC801	Same as above

* If abnormal phenomenon appears at checkpoints, find out the causes according to troubleshooting.

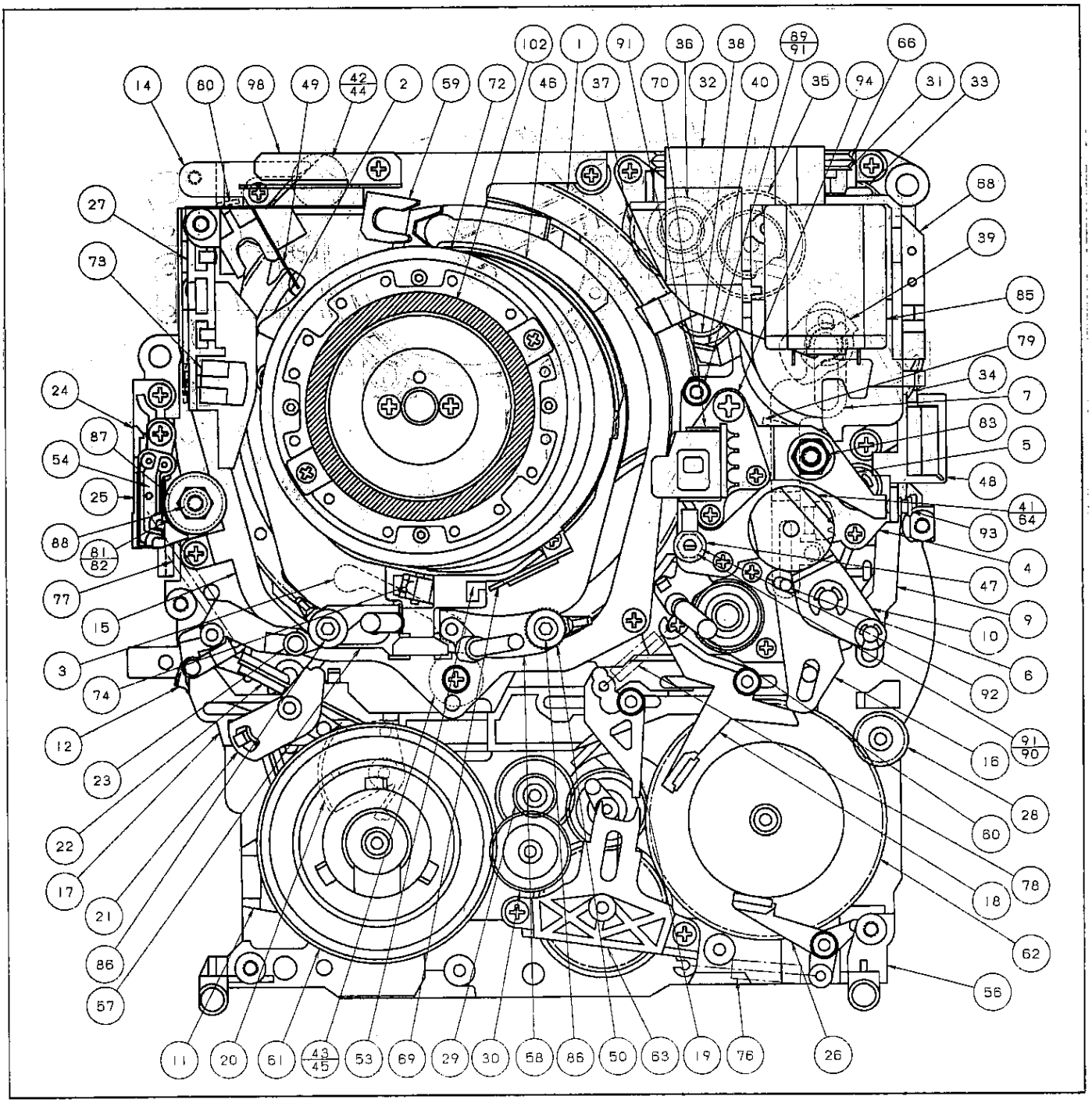
* If Error No. is maintained by Test Mode , replace lithium battery and reset IC8801 (inside of LCD unit) after servicing.

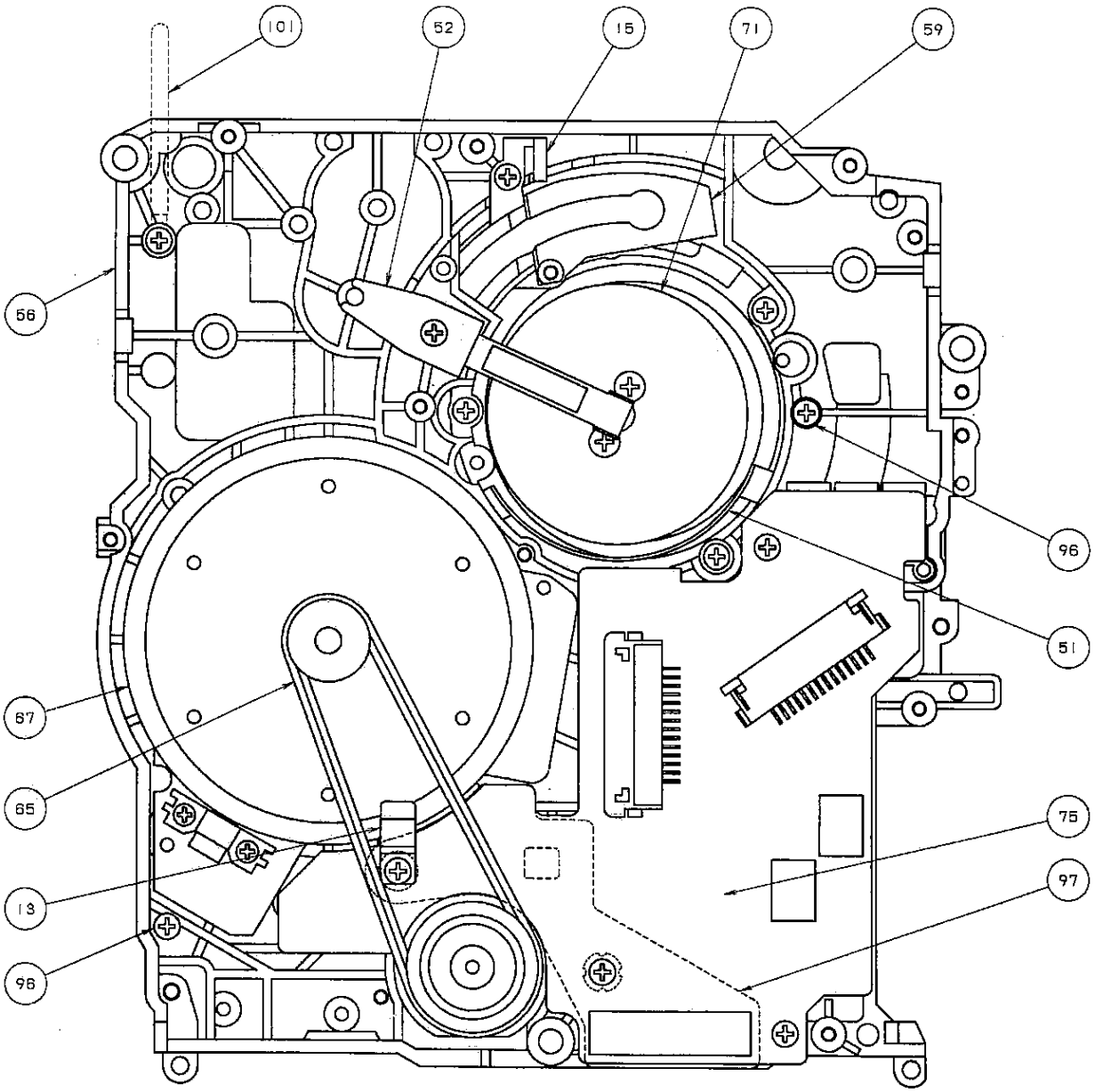
Countermeasures after Error Occurence		
No.	Error Indications	Countermeasures
1.	E007	Set inTest Mode (connect a 56.8k resistor between TP801 nad GND) and operate FF or REW. 1) Is pulse at pin 16 of IC801absent? 2) Check soldering of pin 16 of IC801, if pulse appears at pin 24 of IC701. 3) Check soldering of pins 24, 25 and 27 of IC702 and C707 if pulse is absent at pin 24 of IC701..
2.	E011	1) Is voltage applied to both ends of Loading Motor if PB and REC are operated to reach Loading from STOP ? 2) If applied, check the following; 2-1) Is Mechanism stuck? 2-2) Is pin 3 of connector LA or AM connected well? 3) If not applied, check the following; 3-1) Does Forward-Reverse signal (5V DC) appear at pins 40 and 41 of IC801 ? 3-2) Is output from pins 13 and 4 of IC805? 3-3) Is power supplied to pins 11 and 15 of IC805?
3.	E012	Same as above.
4.	E020	Set in Test Mode. 1) Check that drum turns in PB mode. 2) If drum turns, 2-1) Is 30Hz pulse input to pin 19 of IC801? 2-2) Is 30Hz pulse input to pin 15 of IC702? 2-3) Does drum PG appear at pin 9 of IC702? 2-4) Does FG input 2mVp-p appear at pin 4 of IC702? 3) If drum does not rotaed, 3-1) Is pin 5 of Q704 at LOW? 3-2) Is DRUM CTL sent to pin 4 of (C704?
5.	E025	Set in Test Mode. 1) Operate PB,FF or REW. 2) Is reel pulse applied to pin 11 of IC801? 3) Check soldering of Q832, R869, R868, R867, R866 and C8198. 4) Does pin 1 of Mecha relay Q8002 become approx. 2.4V? And check soldering of R8804. 5) Check soldering of Q8002.
6.	E027	Set in Test Mode. 1) Same as Step 1) of No.5. 2) Is reel pulse applied to pin 10 of IC801? 3) Check soldering of Q831, R865, R864, R863, R862, amd C817. 4) Does pin 1 of Mecha relay Q8001 become approx. 1.2V? Check soldering of R8804. 5) Check soldering of Q8001.

ADJUSTMENT, REPLACEMENT, ASSEMBLY AND CLEANING OF MECHANICAL UNITS

Here we will describe a relativeiy simple service work in the field, not referring to the more complicated repairs which would require the use of special equipment and tools (drum assembly or replacement, for example, which should be performed by a qualified service personnel.)

* AC Adapter must be used for the power supply when checking and adjustment of meachanism are performed.




101
52
15
71
59
56
96
51
67
65
75
13
97
98

Mechanism Parts

No.	Name
1.	L Ring (A) ass'y
2.	L Ring (B) ass'y
3.	Pole base (B) lever
4.	A/C head base ass'y
5.	A/C head arm ass'y
6.	Main shifter operation panel
7.	Slant pole (C) arm lever ass'y
8.	—
9.	Pinch operation lever ass'y
10.	Pinch lever ass'y
11.	Eject slider
12.	Tension band adjusting lever
13.	Capstan Motor Holder
14.	HA fitting Angle
15.	Guide Rale
16.	Change lever
17.	Main shifter
18.	V/S (video search) Reverse brake ass'y
19.	Change gear operation lever
20.	Eject change lever
21.	Tension band base
22.	Tension band ass'y
23.	Tension arm ass'y
24.	Tension arm spring lever
25.	End sensor holder
26.	Rewind sub-brake ass'y
27.	Full erase head arm
28.	Take-up gear
29.	Decelerator gear
30.	Relay gear
31.	Loading motor pulley
32.	Loading motor holder ass'y
33.	Master cam drive gear
34.	Master cam
35.	Loading gear
36.	Reciprocating gear
37.	Loading ring drive gear (A)
38.	Loading ring drive gear (B)
39.	Slant pole (C) pinch cam
40.	Slant pole (C) pinch lever
41.	Pinch roller cap
42.	L ring gear (A)
43.	L ring gear (B)
44.	L ring washer (A)
45.	L ring washer (B)
46.	Pole base (B) guide
47.	Tape guide
48.	Wire holder
49.	Pole base (A) guide
50.	Slider
51.	FPC Holder
52.	Ground brush ass'y
53.	LED PWB
54.	End sensor PWB
55.	—
56.	Main chassis ass'y
57.	Pole base (A) ass'y
58.	Pole base (B) ass'y
59.	Base stopper ass'y
60.	Slant pole (C) arm ass'Y
61.	Reel disk ass'y
62.	Limiter ass'y
63.	Drive Unit
64.	Pinch roller ass'y
65.	Drive belt
66.	Loading belt
67.	Capstan DD motor
68.	Mode switch
69.	Dew sensor
70.	A/C, A/E head
71.	Drum DD motor
72.	Drum Assy
73.	Full erase head
74.	Cassette LED
75.	Drive PWB (Mechanism relay PWB)
76.	Rew auxiliary brake
77.	Tension arm spring
78.	V/S Reverse brake spring
79.	A/C head arm spring
80.	Full erase head arm spring
81.	Supply impedance roller flange
82.	Si.Roller flange B
83.	Supply impedance Roller flange B
84.	—
85.	Loading motor
86.	Guide roller ass'y
87.	Supply impedance roller
88.	Supply impedance roller inner
89.	Retaining guide (A)
90.	Retaining guide (B)
91.	Guide flange
92.	Guide flange B
93.	X-value adjusting screw
94.	A/C head screw
95.	—
96.	Spacer screwA
97.	Drive PWB insulating plate
98.	FPC holder
99.	—
100.	—
101.	Cord clamp
102.	Dinamic Damper Ass'y

Preventive Checks and Service Intervals

The following intervals for checks and servicing should be observed in order to maintain the high quality of mechanical components.

Parts \ Maintained every	500 hrs	1000 hrs	1500 hrs	2000 hrs	3000 hrs	Remarks
Guide Roller Ass'y	□	□	□	□	□	Abnormal rotation of significant vibration requires replacement.
SI Roller	□	□	□	□	□	
SI Roller Inner		□		□	□	Clean with industrial-grade methyl alcohol.
SI Roller Flange	□	□	□	□	□	Clean tape contact area with the specified cleaning liquid.
Retaining Guide	□	□	□	□	□	
Guide Flange	□	□	□	□	□	
Slant Pole	□	□	□	□	□	
Video Head	□	○□	□	○□	○□	Clean tape contact area with the specified cleaning liquid.
F. E Head	□	□	□	□	□	
A/C Head	□	□	□	□	□	
Pinch Roller	□	□	□	○□	□	Clean rubber and rubber contact area with the specified cleaning liquid.
Drive Belt	□	□	□	○	□	
Loading Belt		□		○	□	
Capstan Motor	□	□	□	○□	□	Clean capstan shaft with industrial- grade ethyl alcohol.
Loading Motor				○		
Supply Reel Disk		□△		□△	□△	Clean with industrial-grade ethyl alcohol.
Tension Band Ass'y				○		
V/S R Aux Brake REW Aux Brake				○		
Dynamic Damper Ass'y				○		
Take-up Gear, Relay Gear, Decel. Gear and Drive Pully	△	△	△	△	△	Lubricate each shaft.
		○ Replacement		□ Cleaning		△ Lubricate

<Specified>

Cleaning liquid should be Industrial-grade ethyl alcohol.

* Since the control adjustment of Mechanism is not available in this mechanism and, if the setting value is not obtained, cleaning or parts replacement should be done.

REMOVAL AND REASSEMBLY OF CASSETTE HOUSING CONTROL ASSEMBLY

Note:

1. During removal and reassembly of the cassette housing, take care not to hit the nearby guide pins and the drum.
2. When reassembling, the lock lever of the cassette housing must be placed into the cutting portion of the eject slider. (See Fig. 2-1-b.)
3. Take care to connect the connectors properly.

Removal

1) Remove the VCR from the camera. Detach the mechanism from the VCR board.
2) Put the cassette housing in loading.
3) Pull off the connectors, IC and ID of the cassette housing from the mecha drive board.
4) Remove four fixing screws (red) from the cassette houding.
5) Lift the drum side of the cassette housing slightly upward and with the condition of about 30° tilted, detach it upward.

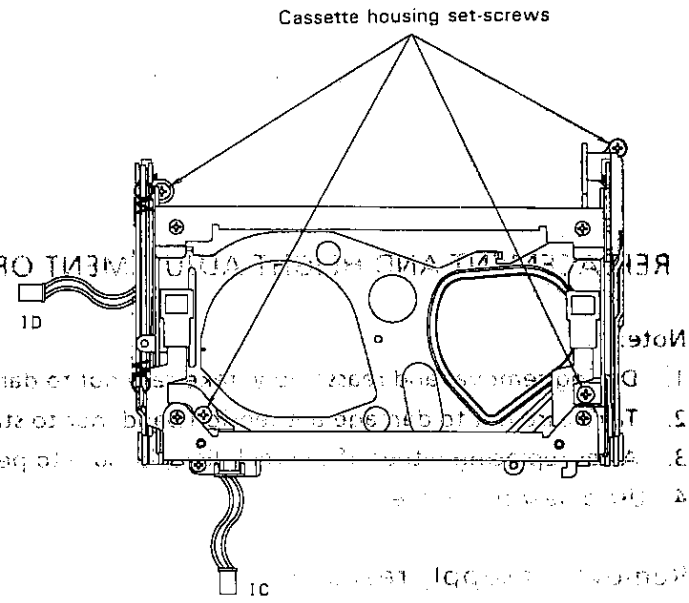


Figure. 2-1 -a

Reassembly

1) In the reverse manner of removal, place the cassette housing to the original position.
2) Fix it with four fixing screws (red).
3) Connect the connectors, IC and ID of the cassette housing to the mecha drive board.

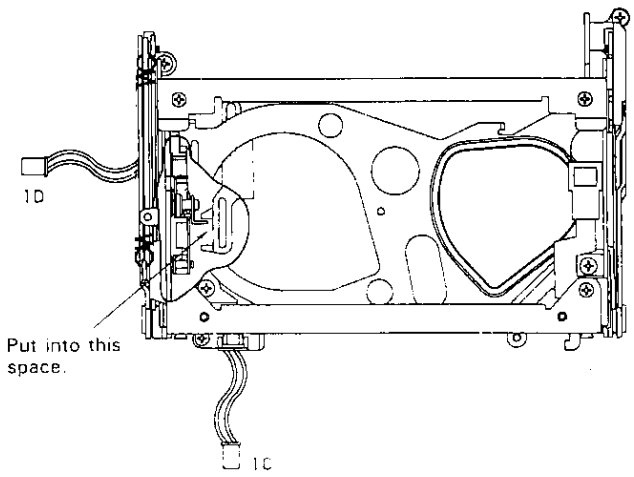
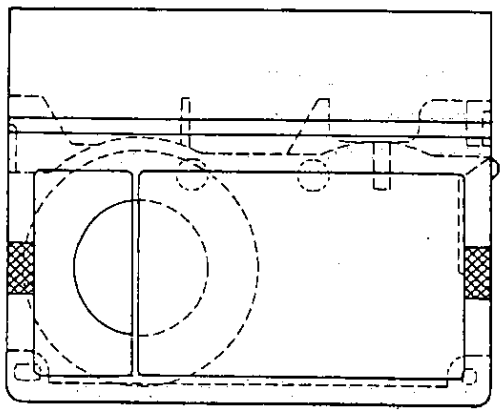


Figure. 2-1 -b

WHEN RUNNING A TAPE WITHOUT CASSETTE HOUSING.

1) Connect a short connector to the ID connector of the mecha-relay board and make it shorted.
2) Set a cassette tape in the tape mechanism. Then stabilize the cassette tape with a weight (350 g or less.)

Note: The weight should not be more than 350g and the mechanism operation should be performed after making sure that the cassette is stabilized with the weight. (See Fig. 2-2)



Place a weight well balanced on the hatch areas.

Figure. 2-2

REPLACEMENT AND HEIGHT ADJUSTMENT OF REEL DISKS

Note:

1. During removal and reassembly, take care not to damage the reel disk and the reel disk shaft with the jig
2. Take care not to damage the tension band, nor to stain the felt with oil.
3. After replacing either of the reel disks, be sure to perform its height adjustment.
4. Use a new cut washer.

Removal of supply reel disk

1) Remove the cut washer (1).
2) Remove the clearance adjusting washer (2).
3) Pull off the supply reel disk (3) upwards, and replace it.
4) Remove the height adjusting washer (4) and clean it. (See Fig. 2-3)

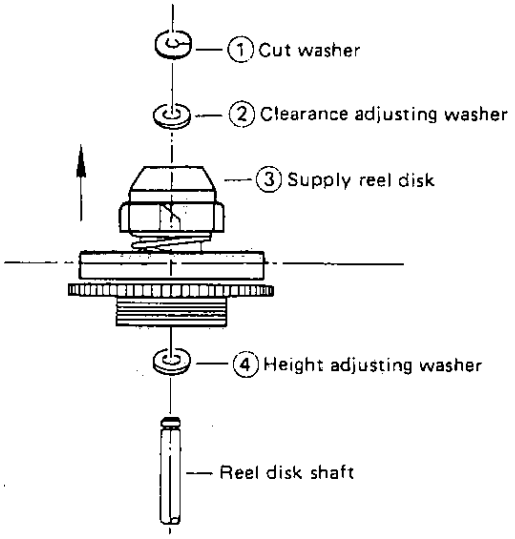


Figure. 2-3

Reassembly

1) Clean the reel disk shaft and fix the height adjusting washer (4).
2) Fix the supply reel disk for replacement.
3) Adjust the height of the reel disk with the master plane and reel disk height adjusting jig.
4) Remove the replaced reel disk. Apply oil (Shell Terrace #32) to the reel disk shaft, and then fix the replaced reel disk again.
5) Fix the clearance adjusting washer (2) so that the thrust tolerance of the reel disk is 0.1~0.5mm after the cut washer of Step 6 is fixed.
6) Fix the cut washer (1).

HEIGHT CHECKING AND ADJUSTMENT OF REEL DISK

Note: Be sure to perform height checking and adjustment of reel disk whenever reel disk is replaced.

1) Remove the cassette housing and set the master plane in the mechanism as shown in Fig.2-4, taking care not to hit the drum or the guide roller gear.
2) Make sure that the reel disk is lower than the part (A) and higher than the part (B) in the figure below by using the reel disk height adjusting jig. If the height is not within the setting value, adjust it with the height adjusting washer so that the reel disk thrust play should be 0.1 to 0.5mm.

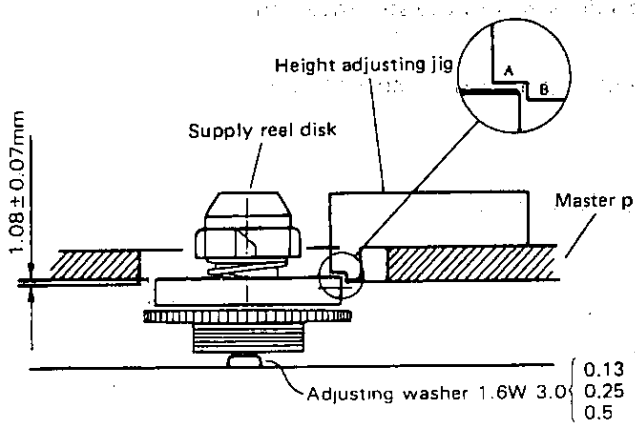


Figure. 2-4

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE

1) Set the torque cassette (JIGCTM0020P) on the take-up reel disk and get the unit in the REC mode (in the case of recorded tape, PB mode). Then check that the take-up torque is within the specification.

   Specification
   SP mode REC (PB) : 45 ± 8 g.cm
   Take-up torque Ripple is under 7 g.cm
   (If torque ripple appears, read its average value.)

Note: Take care not to catch the tape with the lid of the cassette, since there is a possibility of the tape slacking at unloading or ejecting caused by the internal spring of the torque cassette.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

1) Set the torque cassette (JIGVHC032) and get the unit in the V/S REW mode. Then check that the torque of the supply side is within the specification.

Specification

V/S REW take-up torque : 100 ± 15 g.cm

Note: Take care not to catch the tape with the lid of the cassette, since there is a possibility of the tape slacking at unloading or ejecting caused by the internal spring of the torque cassette.

CHECKING OF TAKE-UP TORQUE IN FAST FORWARD MODE

This is the same as the PB take-up torque. Refer to the PB take-up torque.

CHECKING OF TAKE-UP TORQUE IN REWIND MODE

This is the same as V/S REC (take-up PB) torque. Refer to V/S REC (take-up PB) take-up torque.

CHECKING OF BACK TENSION IN VIDEO SEARCH REWIND

1) Set the torque cassette (JIGVHC032) and get the unit in VS-REW (take-up PB) mode. Then check that the back tension of the tak-up side is within the specification.

Specification

V/S REW (take-up PB) back tension : 40 ± 12g.cm

CHECKING OF REWIND BACK TENSION

1) Remove the cassette housing.
2) Get the mechanism in REW mode.
3) Check that the change gear swings to the supply side.
4) Set the torque measuring jig to the mechanism. Rotate the torque gauge slowly counter-clockwise to measure back tension.
5) Check that the measured value is within the setting value.
   Setting value: 8 ± 5 g.cm

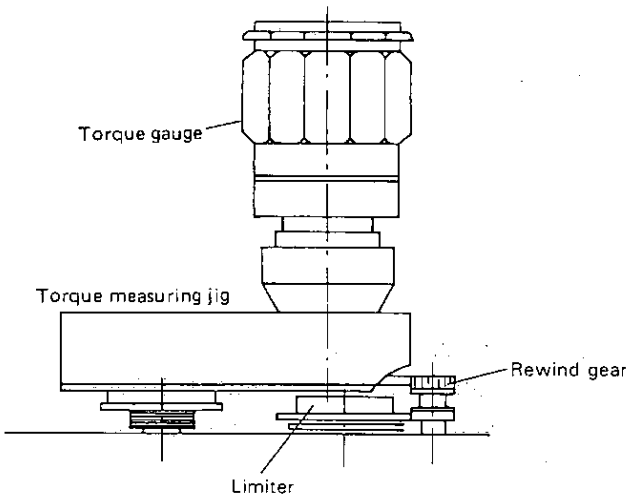


Figure. 2-5

CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

<Checking Position>

1) Check that the center of the tension pole is within ±0. 4 mm from the tip of the triangle mark of the end sensor holder.
   (See Fig. 2-6-a)
2) If the measured value is not within the setting value, adjust as follows.

<Adjustment>

1) Short TP801 of the main board to ground. (By so doing, the unit becomes in the Test Mode in which the end sensor and reel sensor are inoperative, and it can get in PB mode without inserting the tape.)
2) Get the unit in PB mode.
3) Loosen the tension arm position adjusting screw and adjust the tension arm position adjusting bracket so that the right side of the tension pole fits the tip of the triangle mark.
   (See Fig.2-6-b)
4) Disconnect the GND short of TP801.
5) Check the position according to Step 1 of <Checking Position>.

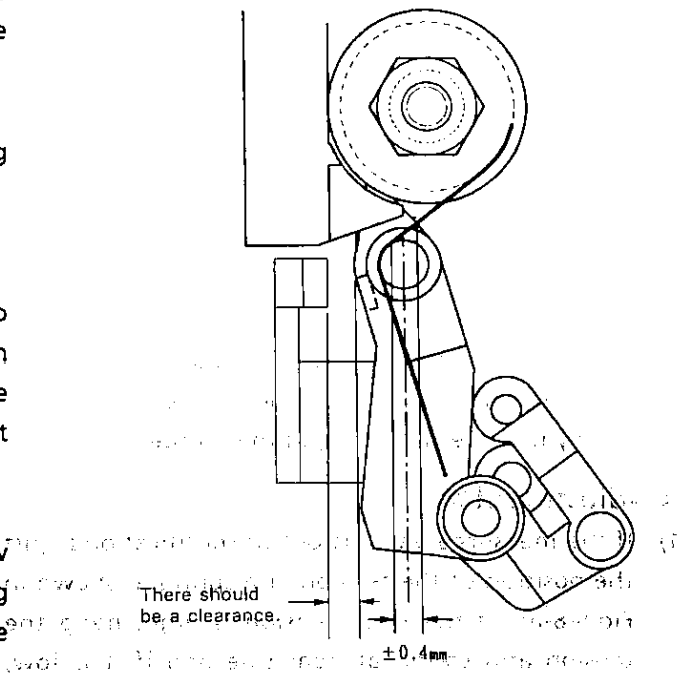


Figure. 2-6-a

Note:

1. After adjustment, apply screw lock to the tension arm position adjusting screw.
2. The tightening torque of screw is 1 kg.cm.
3. Be sure to release Test Mode when the tape is set.
4. Load the mechanism with the tape before checking the tension pole position.
5. Make sure that tension are does not come to contact with cassette controller side. (See Fig. 2-6-a)

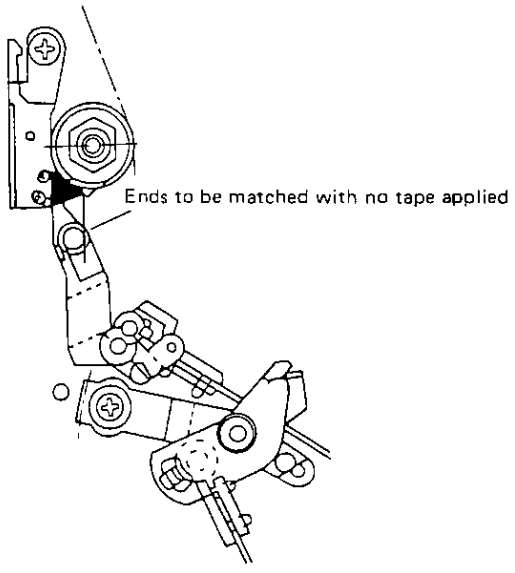


Figure. 2-6-b

CHECKING VERTICALITY OF TENSION POLE

1) Set master plane on the mechanism.
2) Check the verticality of the tension pole with the height adjusting jig A.

CHECKING AND ADJUSTMENT OF BACK TENSION OF RECORDING AND PLAYBACK

<Checking>

1) Set the torque cassette (JIGCTM0020P) and get the unit in the REC mode (in the case of the recorded tape,in the PB mode). Then check that the back tension of the supply side is within the specification.

   Specification

   Sp mode REC (PB) 22 ± 4g·cm

   (Ripple less than 3g.cm)

Note: Take care not to catch the tape with the lid of the cassette,since there is a possibility of the tape slackingat unloading or ejecting caused by the internal spring of the torque cassette.

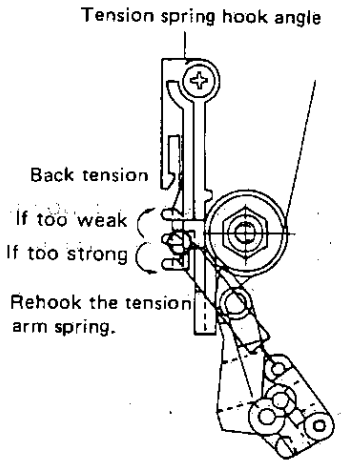


Figure. 2-7

<Adjustment>

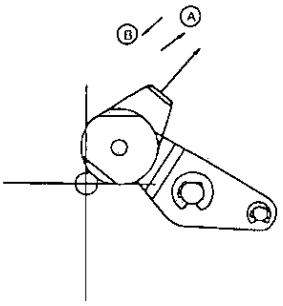
1) If the measured value is out of specification,adjust the position of the tension arm spring as shown in Fig.5-8-a: If the back tension is high, hang the tension arm spring at near side and if it is low, hang it to far side.

Note: After the back tension adjustment, be sure to check the tension pole position.

CHECK OF PINCH ROLLER PRESSURE

1) Short TP801 of the main board. By so doing, the unit gets into Test Mode in which the end sensor and reel sensor are inoperative, and may become PB mode without the tape set.
2) Get the unit in PB mode.
3) Turn OFF the power supply. (Remove battery or turn OFF the power supply AC Adaptor.)
4) Insert the pinch roller pressure tape between the pinch roller and the capstan shaft.
5) Set the tension gauge to the pinch roller pressure tape. Pull the pinch roller in the reverse direction (arrow mark (A)) of engaging direction to be slightly away from the capstan shaft.
6) After that, return the pinch roller gradually (arrow mark (B)). Measure the tension just when the pinch roller has reached the capstan shaft.
7) Check that the measured value is within the setting value.

   Setting value : 1.0 kg ± 0.15kg
8) Release the Test Mode by removing the 56kohm resistor of TP-801.



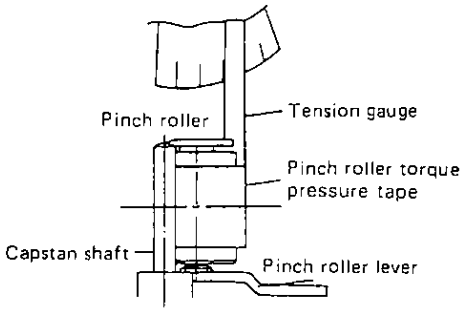


Figure. 2-8

ADJUSTMENT OF TAPE TRAVEL

1. Preparation for Adjustment and Checking of Tape Travel System
   1) Connect each signal to oscilloscope as follows.
      1 ch : BG pin 4 (Head Amp Board)
      2 ch : BG pin 2 (Head Amp Board)
      GND: BG pin 1 (Head Amp Board)
   2) Loosen the guide roller lock screw. With a hexagon wrench for guide roller adjustment, tighten the lock screw lightly so that the tape guides P2 and P3 turn smoothly. The tightening should be neither too loose nor too tight.
   3) Play back a normal tape other than the alignment tape. Check that the tape is free from wrinkles or creases to travel normally along the edge of the tape guides P1, P2, P3, P4 and P5 as shown in Fig. 2-9-b. If wrinkles or creases appear in PB mode, make an adjustment according to SI Roller Fixing Guide A/C Head Tilt Adjustment to eliminate all wrinkles and creases.
   4) If no wrinkles and creases appear, make an adjustment according to Travel Precision Adjustment.

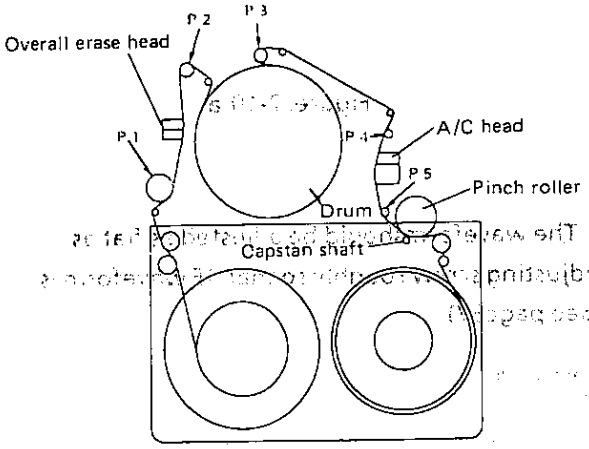


Figure. 2-9-a

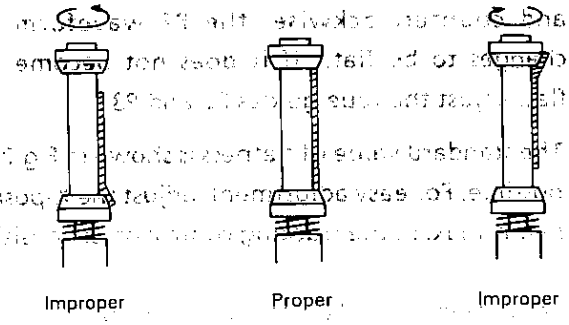


Figure. 2-9-b

2. Checking and Adjustment of SI Roller Retaining Guide Height A/C Head Tilt

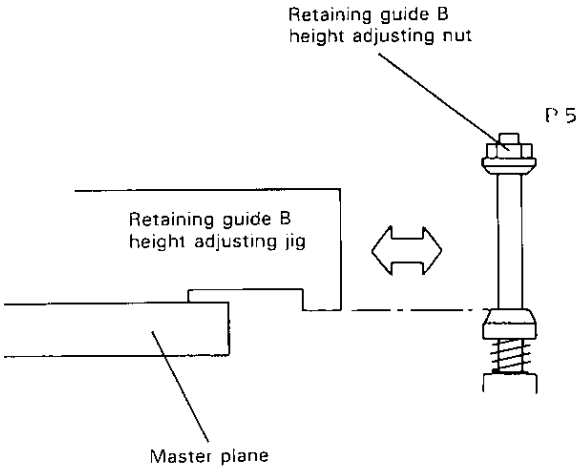


Figure. 2-9-c

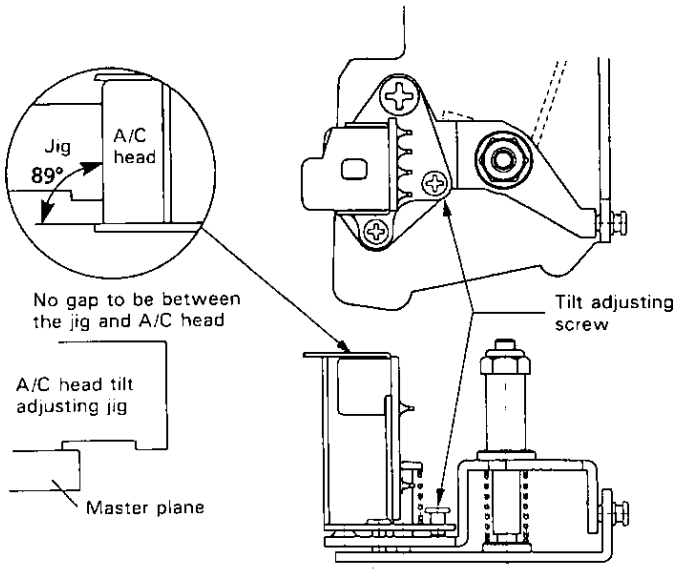


Figure. 2-9-d

   1) Set the master plane to the main chassis.
   2) Set the Retaining guide B height adjusting jig as shown in Fig. 2-9-c and check the height. Turn the adjusting nut slowly with the height adjusting driver to adjust the setting height.

3) Set the A/C head tilt adjusting jig as shown in Fig. 2-9-d and check the tilt. Turn the adjusting screw with the Phillips screwdriver to adjust so that there is no clearance between the jig and A/C head.
4) After the jig is set, playback a normal tape to check that no wrinkles and creases appear in it.
5) If wrinkles or creases still appear after the proper jig setting, turn the tape guide little by little to eliminate wrinkles.

3. Travel Precision Adjustment

1) Playback the monoscope part of the adjustment tape (VR1HPSV) after checking that the tape travel system is free from abnormal phenomena.
2) Observe RF waveform on the oscilloscope. Check the flatness of RF waveform by turning tracking control clockwise and counterclockwise.
When turning the tracking control clockwise and counterclockwise, the RF waveform changes to be flat. if it does not become flat, adjust the tape guides P2 and P3.

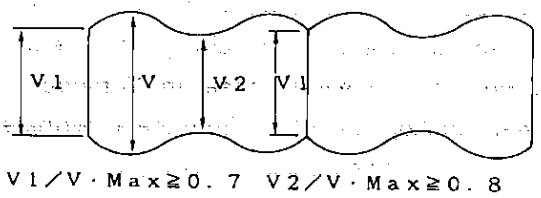


Figure. 2-10-a

The standard value of flatness is shown in Fig.2-10-a. The waveformshould be adjusted as flat as possible. For easy adjustment, adjust the X-position adjusting screw roughly so that RF waveform is nearly max. in the tracking control preset position. (See page37)

3) Adjustment of entry side tape guide P2.
By turning the tracking control, check that the entry side of waveform changes as keeping analogous figure when RF output is turned from its maximum to either right or left. If the figure differs in turning right and in turning left, it means that height adjustment of P2 is insufficient. So, adjust the height of P2 so that the figures become as similar as possible.
4) Adjustment of exit side tape guide P3.
Adjust the height of P3 in the same manner as entry side so that RF waveform change becomes as similar as possible. (Fig. 2-10-c)
5) After steps 3) and 4), turning the tracking control left and right, observe whole RF waveform. Make a fine adjustment of tape guides P2 and P3 so that the waveform becomes as flat as possible even when RF output is either maximum or minimum.
6) After adjustment, turning P2 approx. 25° counterclockwise, lock the lock screws of tape guides P2 and P3 with care not to overtighten them.

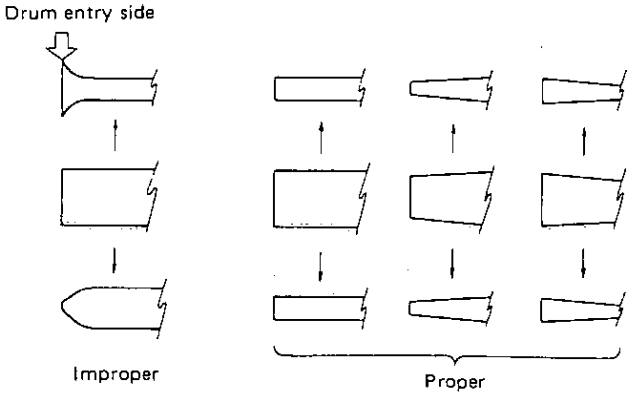


Figure. 2-10-b

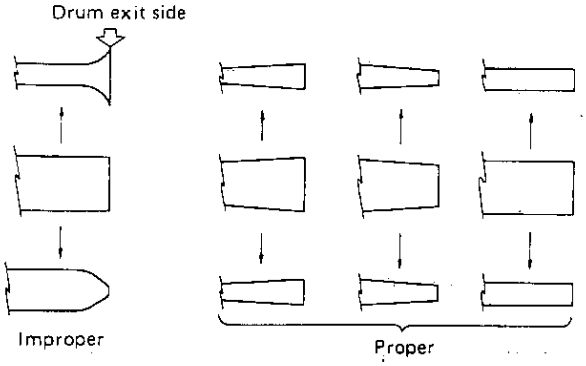


Figure2-10-c.

4. A/C Head Azimuth Height Adjustment

1) Connect audio output to oscilloscope.
2) Play back the monoscope part of alignment tape (VR1HPSV). Make azimuth adjustment by turning the azimuth adjusting screw so that audio level becomes maximum.
3) Slowly turn the height adjusting nut with the box driver to adjust the height so that audio output becomes maximum. (Fig. 2-11)

5. X Position Adjustment

1) Adjust tracking control to click center.
2) Playback the monoscope part of alignment tape (VR1HPSV). Adjust X position adjusting screw with the Phillips screwdriver to the position in which RF waveform of L ch side becomes maximum.
3) Turn the tracking control right and left to check that RF waveform of L ch side becomes maximum at the center click position.

* Connection of oscilloscope should be made in the same manner as in Travel Precision Adjustment.

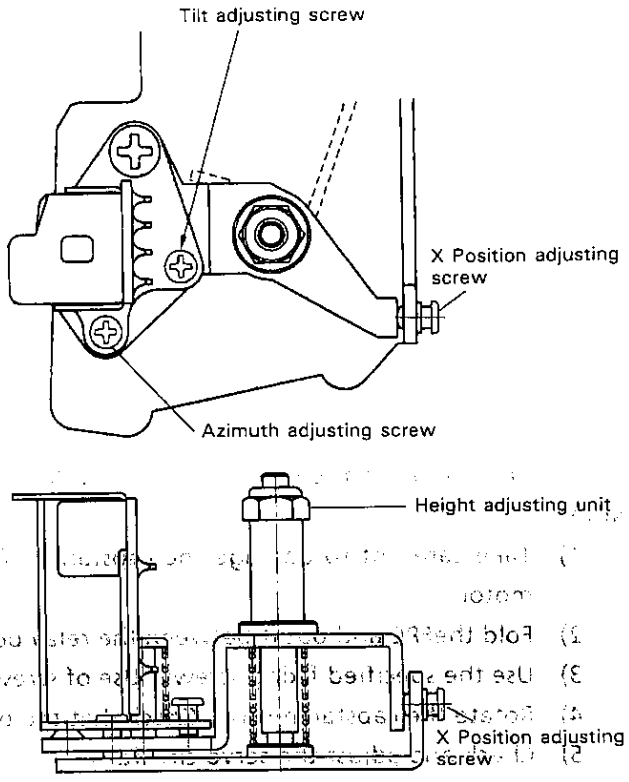


Figure. 2-11

6. Checking and Adjustment of Playback Switching Point

1) Connect oscilloscope as follows:
   CH1: Video output
   CH2: BG pin 3 (Main Board): 30Hz Trigger
   GND: BG pin 1 (Main Board): GND
2) Be sure to play back the alignment tape.
3) Set the tracking control to click center.
4) Make the sync slope of oscilloscope to be (-), and adjust R746 so that the space between trigger point and V sync is 6.5H. (See Fig. 2-12-a.)
5) Make the sync slope to be (+), and check that the space between trigger point and V sync is 6.5H. (See Fig. 2-12-b)

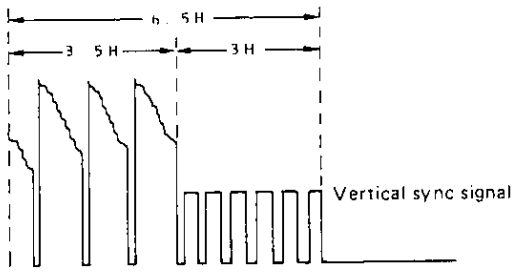


Figure. 2-12-a

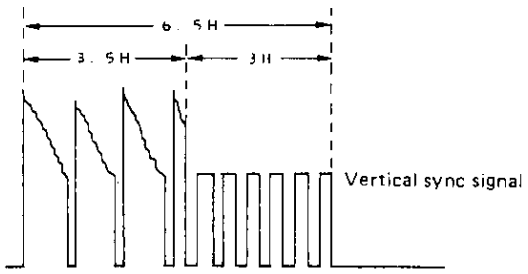


Figure. 2-12-b

7. Checking of Self-Recording

1) After all adjustments are completed, check the flatness of RF waveform and audio sounds by self-recording.

REPLACEMENT, REASSEMBLY OF MECHANISM

1. Replacement of Capstan Motor

<Removal>

1) Remove the drive belt.
2) Remove the connector of capstan motor from the connector of mecha relay board.
3) Remove four fixing screws of mecha relay board.
4) Remove three fixing screws of capstan motor and pull out the motor downwards.

<Reassembly>

1) Reassemble in the reverse manner of Removal.

Note:

1) Take care not to damage the capstan shaft or SPC arm with the driver while reassembling the capstan motor.
2) Fold theFPC and put it between the relay board and main chassis.
3) Use the specified fixing screws. Use of screws other than the specified may cause a motor damage.
4) Rotate the capstan motor. Check that the belt travel is normal.
5) Check and adjust the servo circuit.
6) Check and adjust tape travel.
7) Take care not to bring a magnetized driver into contact with the FG magnet around the rotor.

2. Reassembly of Loading Gear

1) After inserting the L.R. drive gear, the fix L ring B assembly to the proper position.
2) Insert the L.R. drive gear A assembly. At this time, fit each mark (1) of L ring B and L.R. drive gear A. Also, fit each mark (2) of L.R. drive gear B and L.R. drive gear A. (See Fig. 2-13-a.)
3) Fix the L ring A assembly to the proper position. At this time, fit each mark (3) of L ring A and L.R. drive gear B. (See Fig.2-13-b.)
4) After fixing the cut washer, check that the L.R. drive gear A assembly moves smoothly by turning it.
5) Before fixing the loading gear, insert a pin gauge (ϕ1.5) in order to fit the position holes of L ring A and L ring B (See Fig.2-13- c.)

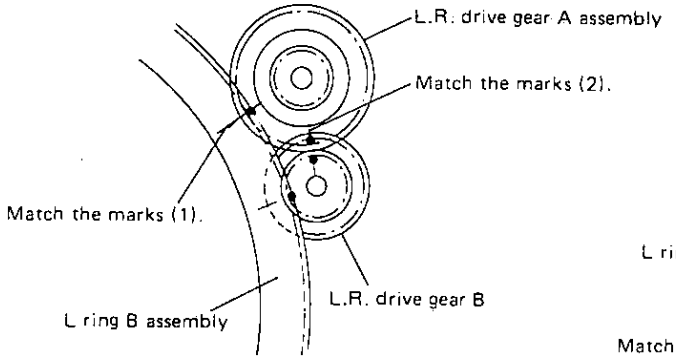


Figure. 2-13-a

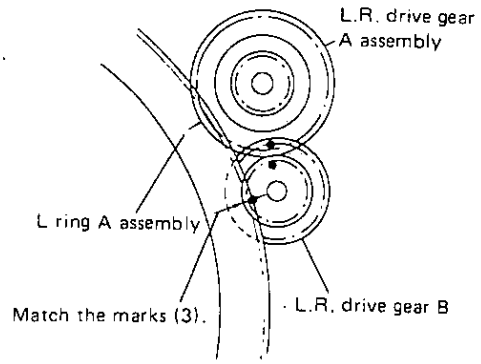


Figure. 2-13-b

6) Insert the loading gear. At this time, turn the engaging gear against the engaging SPR to fit the marks of engaging gear and loading gear. (See Fig. 2-13-c.)
7) While performing Step 6), fit the toothless part of loading gear to the toothless part of master cam . (See Fig. 2-13-c)
8) After inserting loading gear, check that the L.R. drive gear A engages with the engaging gear.

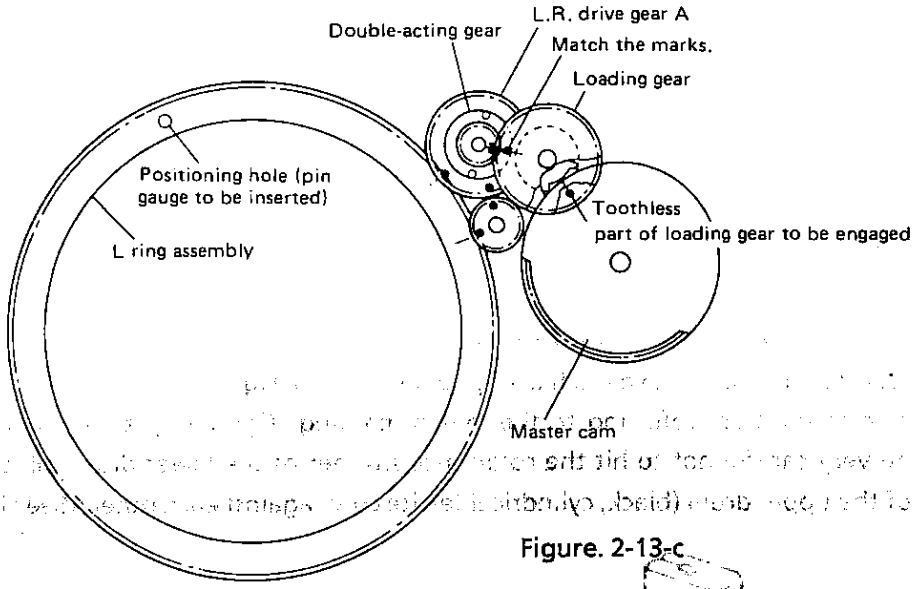


Figure. 2-13-c

3. Replacement of Drum Motor

1) Pull off the connector lock of drum motor on the mecha relay board. Remove the drum motor FPC lead from connector (See Fig.2-14-a.)
2) Remove one earth brush fixing screw and detach the earth brush. Take care not to deform the earth brush. (See Fig.2-14-b)
3) Next remove the upper and lower drum assemblies as well as the drum motor assembly, referring to "5. Replacement of Upper and Lower Drum Unit."
4) Place the upper drum upside down. Remove two FPC holder fixing screws and detach the FPC holder. (See Fig. 2-14-c.)
5) Remove two rotor fixing screws and detsch the rotor of drum motor. (See Fig. 2-14-b)
6) Remove three stator fixing screws and pull off the drum motor stator. (See Fig.2-14-d)
7) Fix new drum motor stator in the reverse manner of Step 6). Tightening torque should be 1.0 ± 0.1kg.cm.
8) Fix the new drum motor rotor in the reverse manner of Step 5).
   Tightening torque: 2.0kg.cm
   Note: At fixing, the phase fixing hole of pre-pressure and that of motor rotor should be fit.
9) Mount the FPC holder in position and tighten up the fixing screws to 1.0 + 0.1 kg.cm.

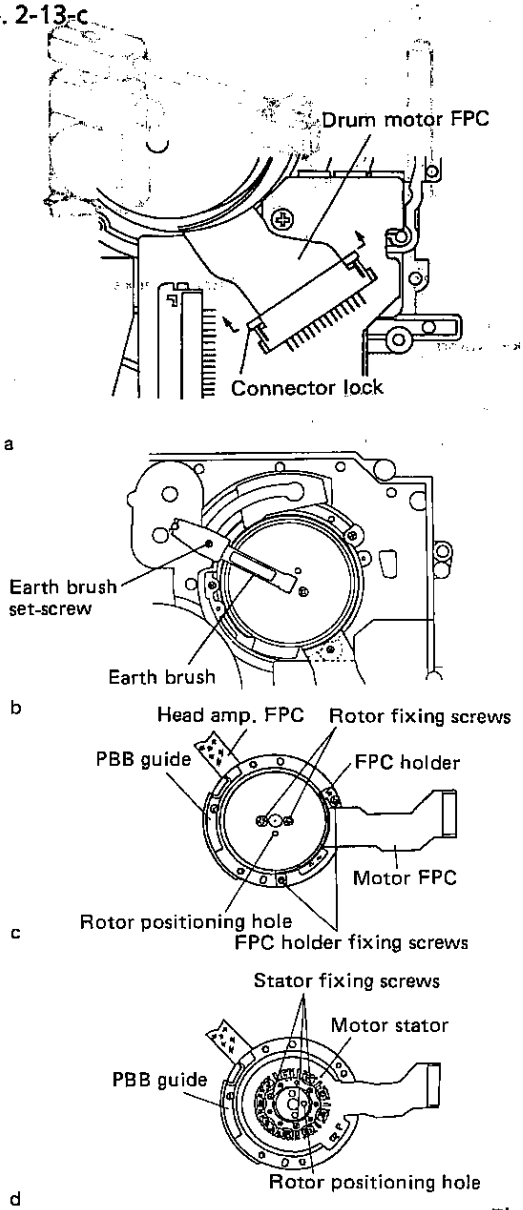


Figure. 2-14

10) Place the upper and lower drum unit on the chassis, referring to "5. Replacement of Upper and Lower Drum Unit."
11) Fix the earth brush in the reverse manner of removing it.
12) Insert the drum motor FPC lead to the connector securely to the bottom and insert the connector lock.
13) Now make adjustments of tape travel, X-position and switching point.

4. Replacement of Upper Drum

<Preparation of Replacement>

Before replacement of the upper drum, fix the micro checker stand and micro checker to the master plane in order to assemble the upper drum peripheral swing meter. (Fig. 2-15-a)

1) Remove two damper fixing screws and detach the damper ass'y. (See Fig. 2-15-b.)
2) Remove two fixing screws of upper drum to detach the upper drum. (See Fig. 2-15-b.)
3) Place a new upper drum in position, referring to the match marking. Tighten up two upper drum fixing screws. At this time, be very careful not to hit the rotary transformer of the lower drum (black, cylindrical ferrite core) and that of the upper drum (black, cylindrical ferrite core) against each other. (See Fig. 2-15-c.)

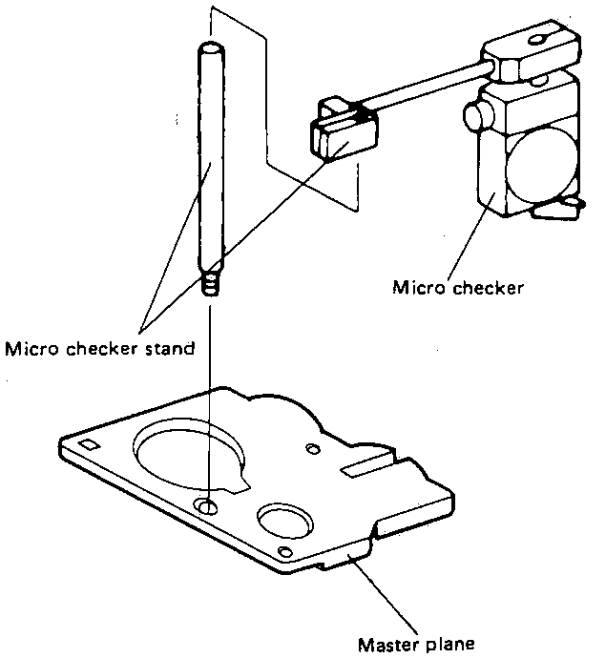


Figure. 2-15-a

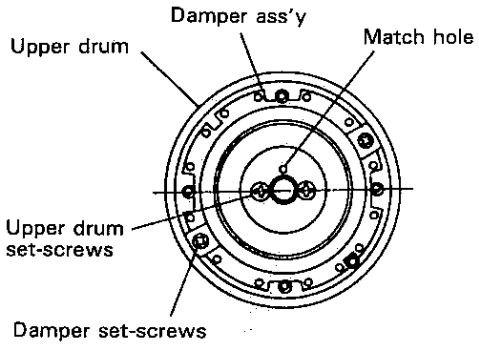


Figure. 2-15-b

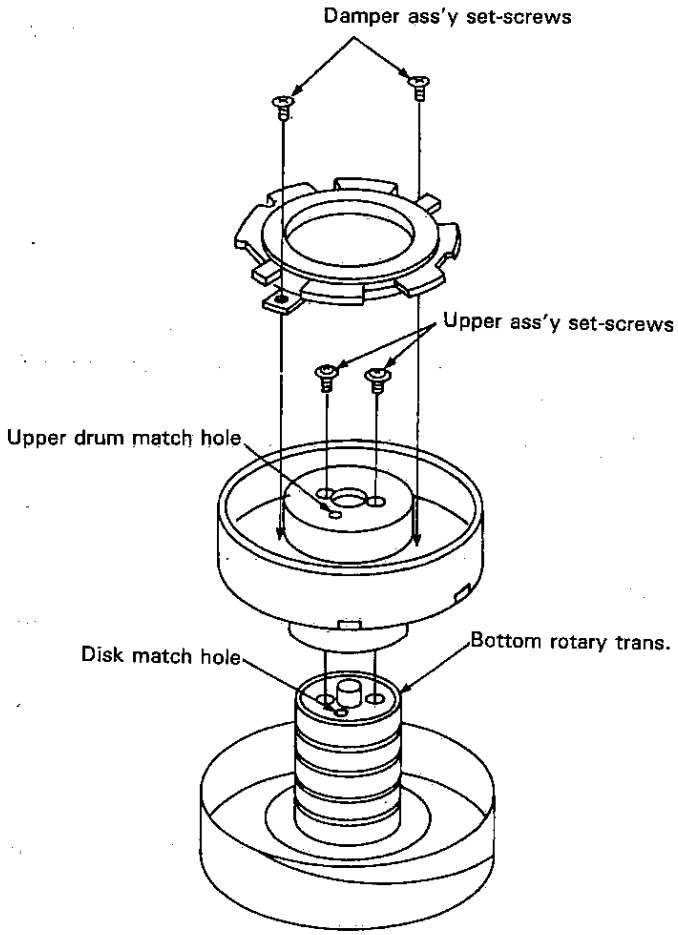


Figure. 2-15-c

4) Checking of Peripheral Swing

(1) Fix micro checker prepared beforehand with care that the meter does not hit the drum. The meter should be placed between GR-B and SP-C facing drum center and within the range of 2~5mm from the top of upper drum. (See Figs. 2-15-d and 2-15-e.)

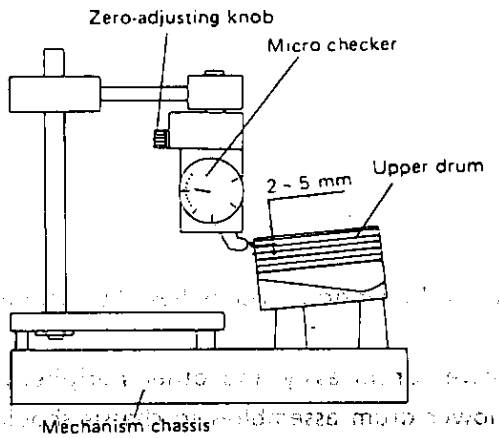


Figure. 2-15-d

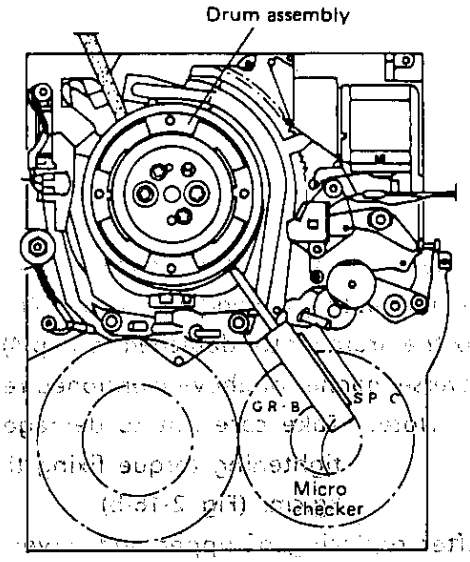


Figure. 2-15-e

(2) Turn the 'zero' adjusting knob of micro checker so that the needle points '0'.

(3) Turn the upper drum slowly with care not to put force to it, and check that upper drum peripheral swing is within 4 µm. If not, loosen two upper drum fixing screws and make the adjustment as follows: As shown in Fig2-15-f, to begin with, insert a watch screwdriver between the upper drum in opposite side of (+) peak direction of upper drum peripheral swing and shaft. Move upper drum in the opposite side of (+) peak direction to make the peripheral swing within 4 µm. (See Fig. 2-15-f.)
Then,tighten the upper drum fixing screws and measure the peripheral swing. Check that it is within 4 µm.

5) Fix the damper ass'y in the reverse manner of removing it.

6) After upper drum replacement,make X-position adjustment in switching point and Tape travel adjustment.

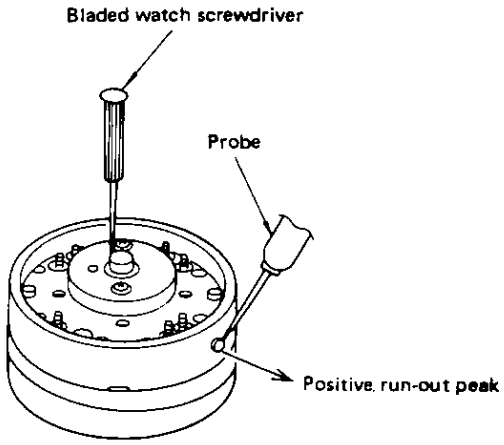


Figure. 2-15-f

5. Replacement of Upper and Lower Drums

Note: Take extreme care during removal or replacement of upper & lower drum units. Never touch the video head.

1) Pull out the connector lock on the head amp board and pull off the video head amp relay FPC from the connector. (See Fig. 2-16-a.)
2) Remove the drum motor FPC and earth brush in the same manner as in Drum Motor Replacement 1) and 2).
3) Remove three drum fixing screws to detach the component of upper & lower drum assembly and drum motor. (See Fig. 2-16-b.)
   Note: Take care not to damage the upper & lower drum assemblies and other peripheral parts.
4) Place the component detached in 3) with upper drum downwards and remove drum motor in the same manner as Steps 3) and 4) of Drum Motor Replacement.
5) Fix the drum motor detached in step 4) to new upper & lower drum assemblies. Reassemble them in the reverse manner of above mentioned removal.
   Note: Take care not to damage upper & lower drum ass'y and other peripheral parts. The tightening torque fixing the upper & lower drum assemblies to chassis should be 1.0 ± 0.1 kg.cm. (Fig. 2-16-b)
6) After replacing of upper and lower drums, be sure to make tape travel adjustment, X-position adjustment and switching point adjustment.
   Note: the slacking portion of head amp relay PPC should be stored completely inside of PPC guide.

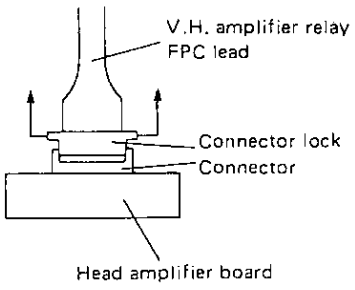


Figure. 2-16-a

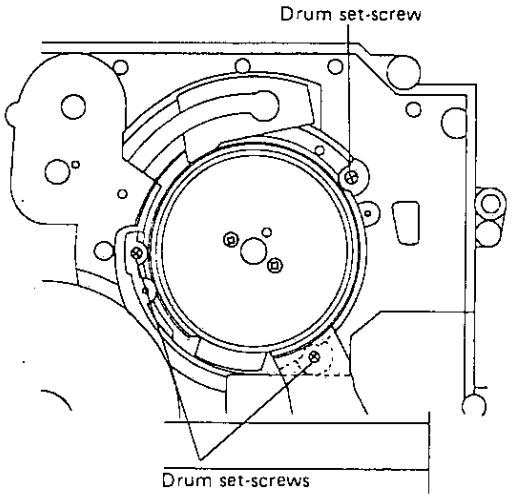


Figure. 2-16-b

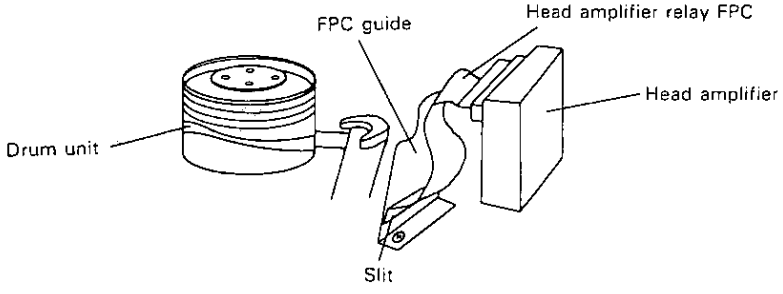


Figure. 2-16-c

ADJUSTMENT OF ELECTRICAL CIRCUIT

Adjustment of Camera

Service for Camera Section

The following extension cords are required in performing PWB repair and re-adjustment of Camera section.

QCNW-0901GEZZ --Connected to Power Supply

QCNW-0902GEZZ --Connected to KD connector

QCNW-0903GEZZ --Connected to LD connector

* QCNW-0900TAZZ -----for Signal-Enc relay

(Refer to the Extension Wire List on page 3.)

Cable for camera PWB service

QCNW-0898TAZZ -----for SSG-Enc relay

QCNW-0899TAZZ -----for Signal-Enc relay

* Note: Two pieces of QCNW-0900TAZZ are needed.

When camera is mounted to the tripod, special table (JIGSTAND-C70) should be used and as shown in the figure below, it is fixed by putting in the groove of lens holder.

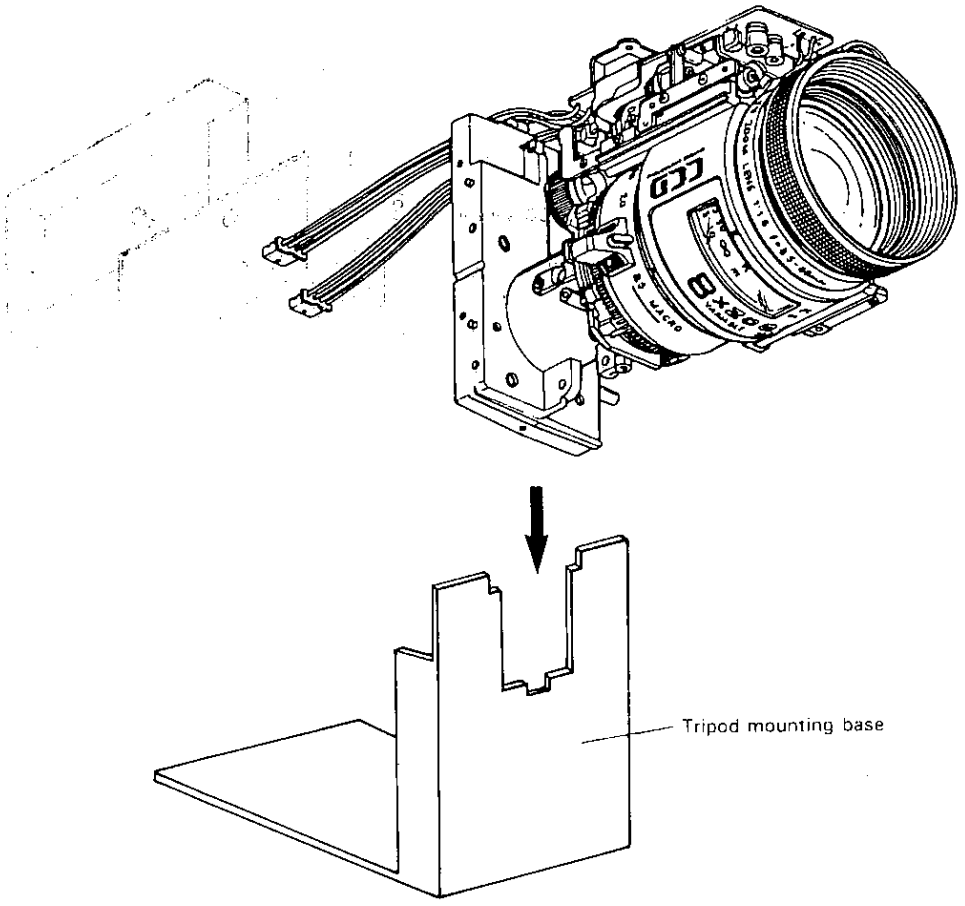


Figure. 3-1

(CCD Sensor Replacement)

1) CCD image sensor has weaker characteristic than C-MOS LSI against the damage caused by static electricity. Therefore, Electro-static Damage Prevention Technique must thoroughly be carried out at replacement.
   a. Soldering iron must be grounded.
   b. Human body must also be grounded by wearing the wrist strap (via 1Meg ohm resistor.)

   Note: Before replacement, the CCD sensor must be put into the conductive sponge so that its foot lead to be shorted until it is fixed to the board.
2) Take good care not to stick any stain, dust or scar on the surface glass or optical filter of CCD sensor. If any stain such as fingerprints sticks, wipe it off with silicon paper or clean chamois.
3) When replacing CCD sensor, use the soldering iron with protection against static electricity and soldering should be done within a very short time.

[Removal of CCD sensor]

1) Remove two screws "F" to detach lens from sensor PWB unit.
2) Remove two screws "A" fixing crystal frame 10. Detach crystal frame 10, crystal and dust protection rubber 9.
3) Remove two screws "D" fixing sensor holder.
4) Pull off CCD sensor from the board by unsoldering.

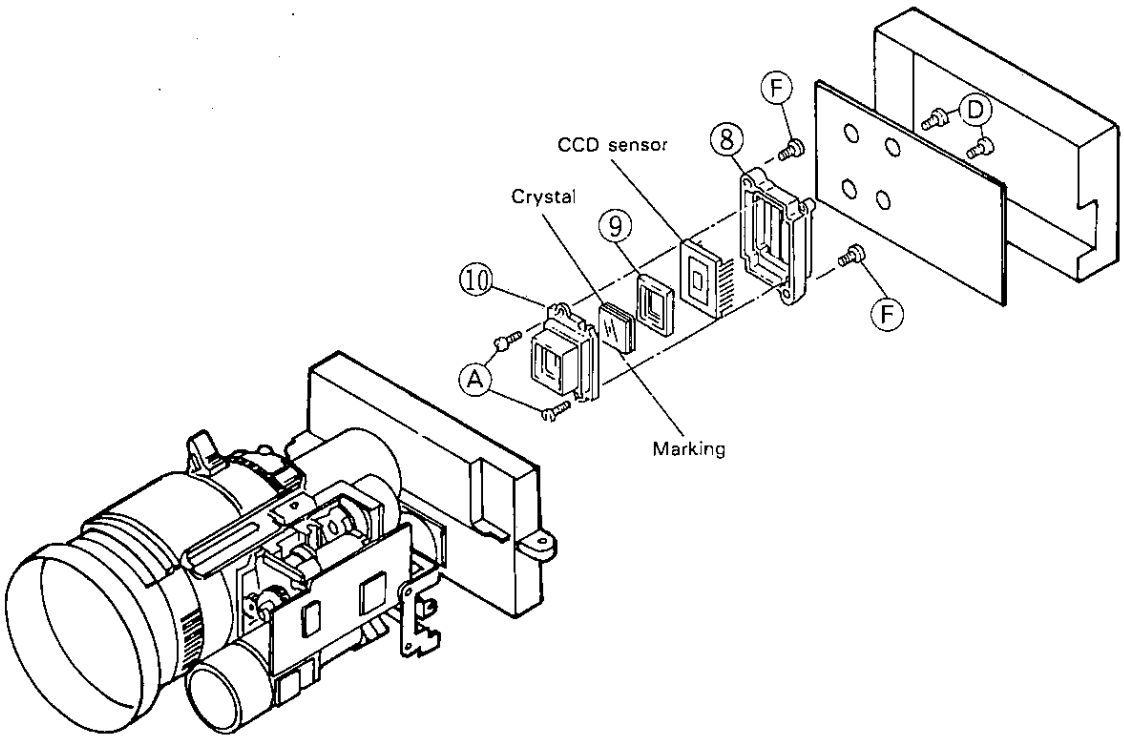


Figure. 3-2

[Fixing of CCD sensor]

1) Place CCD sensor on the sensor base B. At this time, place the CCD sensor by putting its upper left corner (pin 20 side) to the sensor base in order to eliminate the clearance between CCD sensor and sensor base (which means that CCD center is fit to the light axis of lens.) Then, mount the unit composed of crystal frame 10, crystal and dust protection rubber 9 and fix it with two screws "A" to sensor base 8.
   Take care to place CCD sensor and sensor base 8 in proper direction against the board. Also assemble them carefully so that Yellow marking of crystal comes in the front lower part.
2) Fix sensor base B to the lens in proper direction with two screws "F".
3) Put the pin of CCD sensor coming from sensor base 8 into sensor board carefully and fix the board with two screws "D".
4) Solder the pin of CCD sensor to sensor board. At this time, take care not to apply excessive heat.

[Adjustment of Camera]

1) Object, Meter and Jig necessary for Camera Adjustment.

*Gray scale	*White pattern
*Color bar pattern chart	*Siemens star
*Oscilloscope	*Frequency counter
*VTVM	*Vectorscope
*Illuminometer	*Color temperature meter
*Color video monitor	
*Halogen light (2)	*Tripod fixing jig
*Extension cable (6 types)	*Lens tracking driver
*DC power supply 9.6V	*A/F adjustment chart
*AV output cable	*Color temperature conversion filter (KODAK WRATTEN 80B)

2) Standard Connection at Camera Adjustment
   When adjusting the camera;

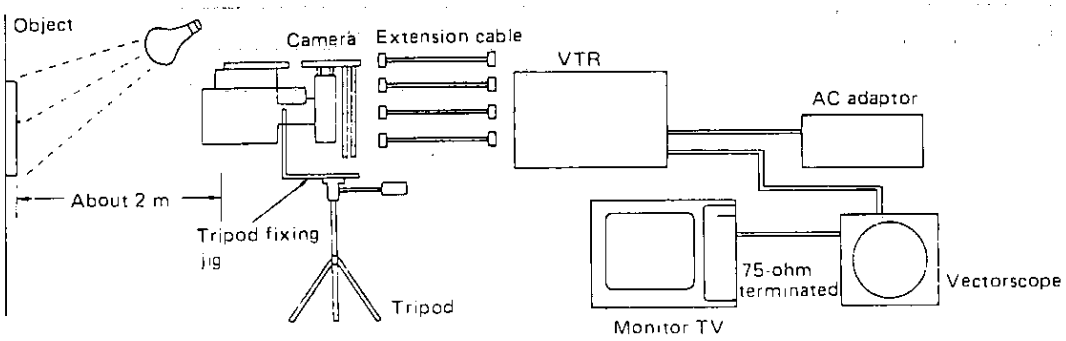


Figure. 3-3

For SENSOR board adjustment or repair, CCD replacement or Lens replacement, separate Camera sector from VCR section (including power unit and liquid crystal unit) and connect them with an extension cable. Mount the camera on the tripod with the tripod fixing jig. As for the other boards, adjustment can be made with the camera connected to VCR

3) Preparation before Adjustment and Checking

(1) Illumination

Intensity of Illlumination —— Adjust the lights so that the intensity of illumination will become around 4000Lux and even on the whole pattern. (More than two lights for illumination source is preferable.)

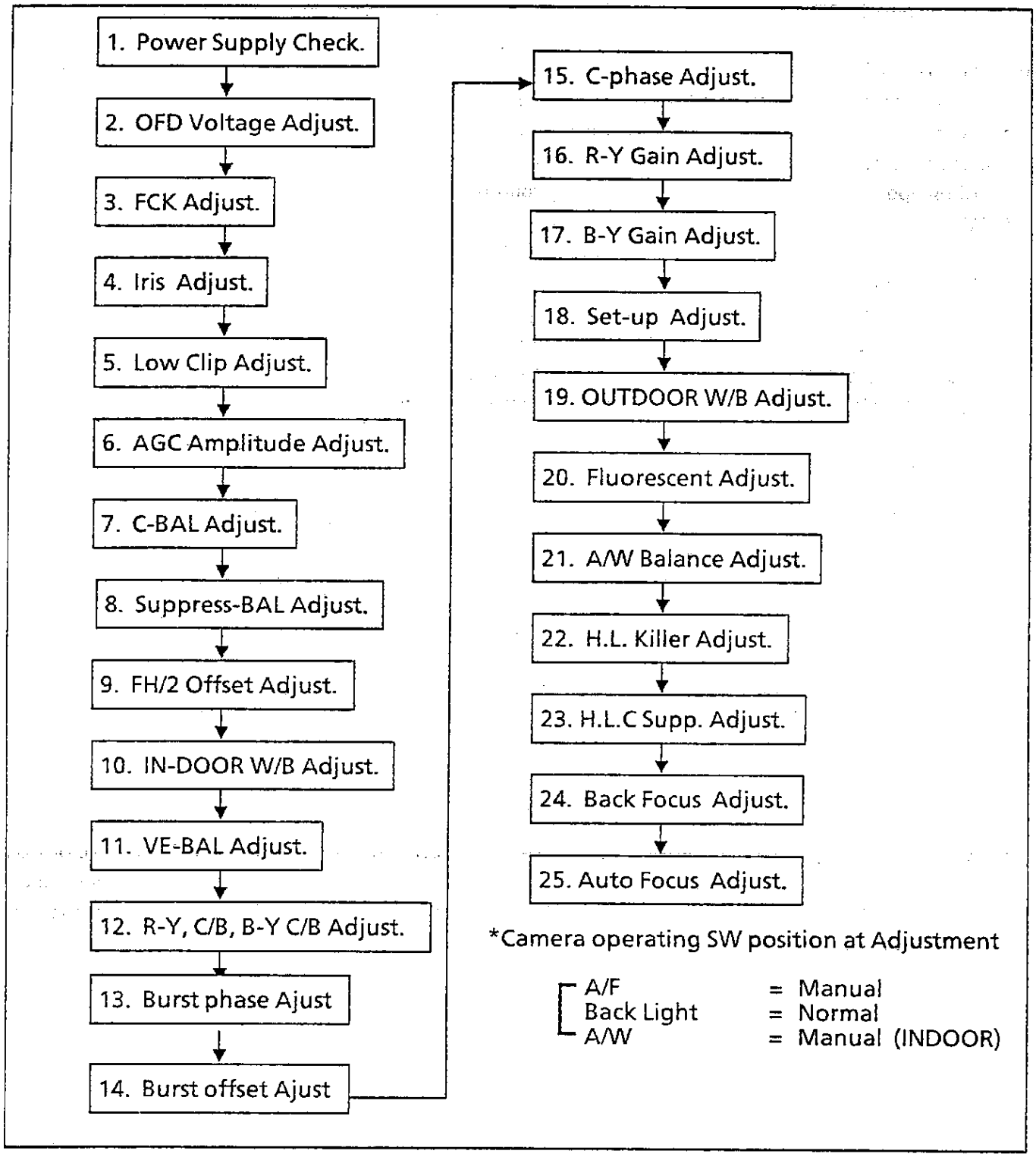
Color temperature — 3200°K

(2) Use a new test pattern free from blemish or dye.

(3) In the case when something wrong occurs with the electric circuits, be sure to find out the defective part by meter, repair or replace it and then make the adjustment.

Note: Don't move any adjusting control blindly without finding out the defective part.

(4) Camera Adjustment Procedure



This adjustment procedure indicates the order necessary to follow in performing all adjustments in case of replacement of CCD. Accordingly, some items may not be necessary to follow depending on the cases.

4) Adjustment Procedure

(1) Checking of Power Supply

20V line .....20 ± 1V
9.0V line.....9.0 ± 0.2V
-11V line.....-11 ± 1V
5V line.....5.1V ± 0.05V
9.6V line.....9.6V ± 0.5V

Check the P901 connector of SSG board.
Take care not to be shorted as the space is narrow.

(2) Adjustment of OFD Voltage

OFD (Overflow Drain) suppresses blooming by bypassing overcharges of CCD element. The Blooming can be suppressed by raising the voltage, but too much raising causes the saturation signal output level to lower.
*Blooming is a phenomenon which appears in the picture as shown in the figure below when a high brightness object is projected.

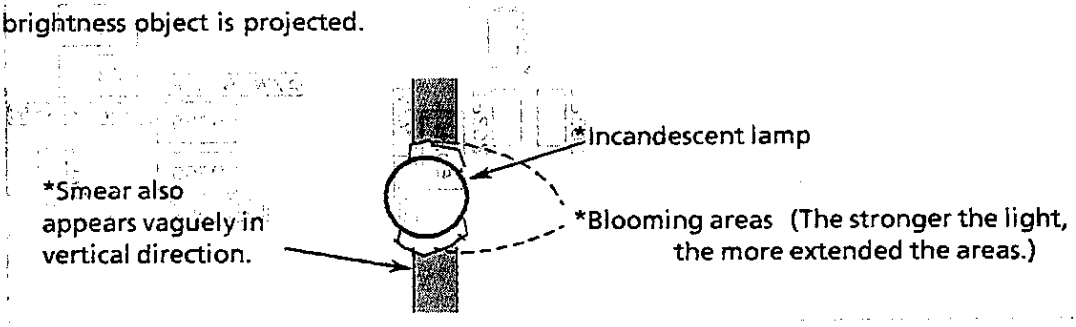

*Incandescent lamp
*Smear also appears vaguely in vertical direction.
*Blooming areas (The stronger the light, the more extended the areas.)

Figure. 3-4

White Pattern Project

Adjusting place R116
Measuring point TP106, TP107 and Monitor TV

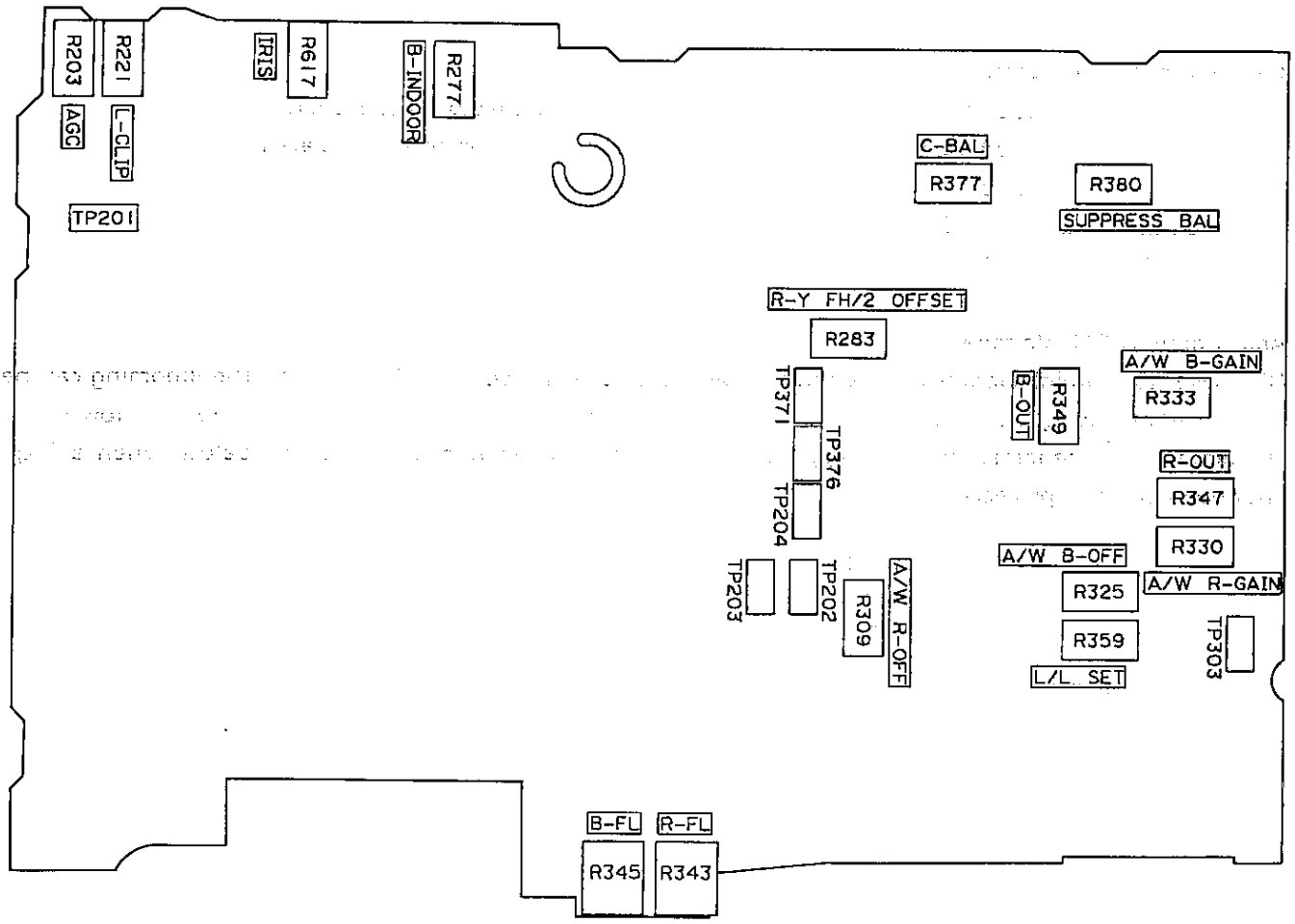
Turn R150 fully clockwise to minimize OFD voltage.

Project white pattern. Turn the center point of Iris control (R617) to the ground to open iris level.

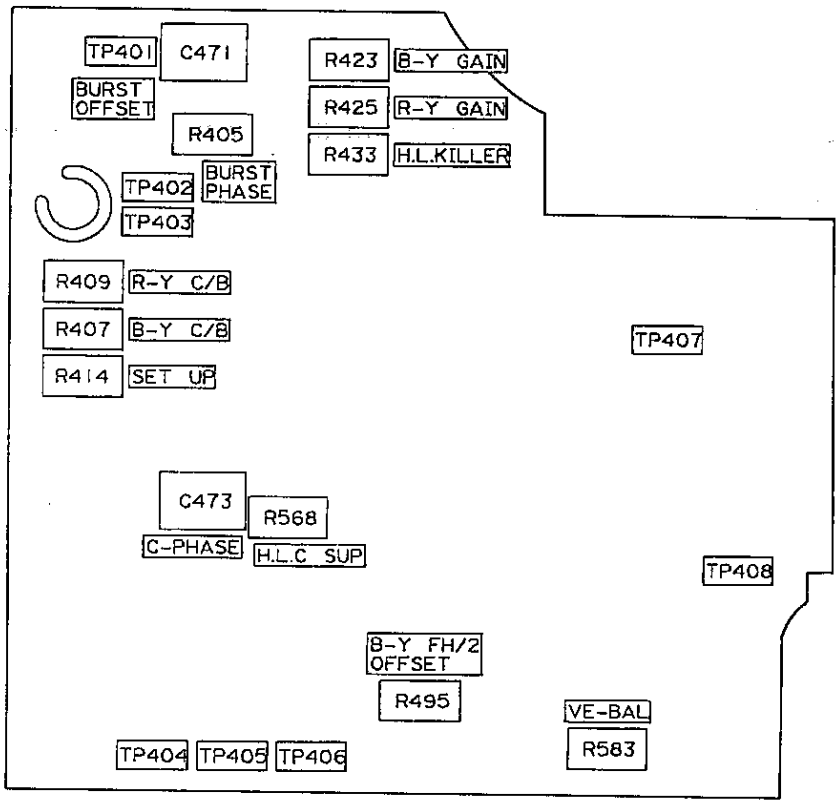
Adjust R116 so that TP107 signal amplitude be 900mVp-p.

Location of Test Points and Controls

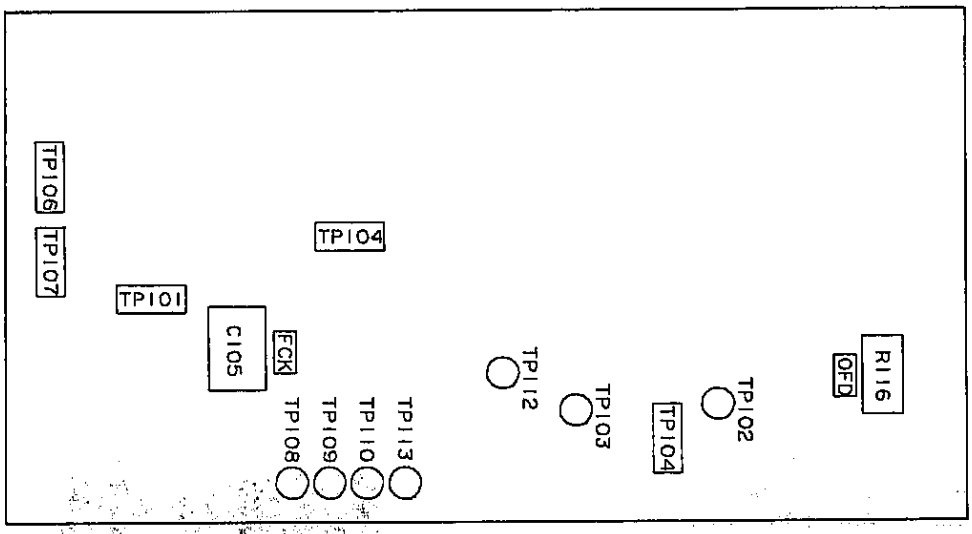
- Signal Process, Auto White Circuit



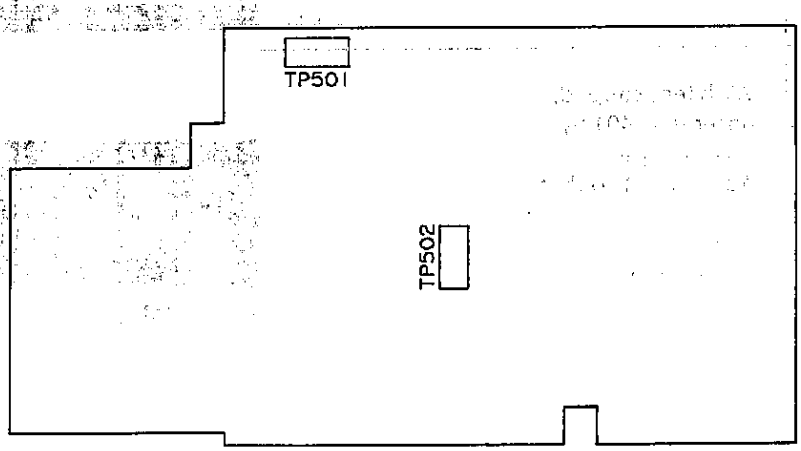
- Encoder Circuit



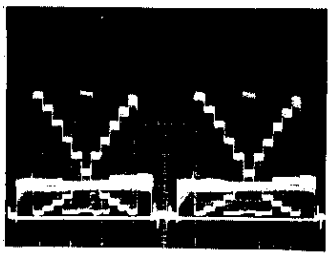
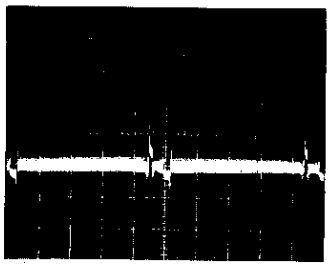
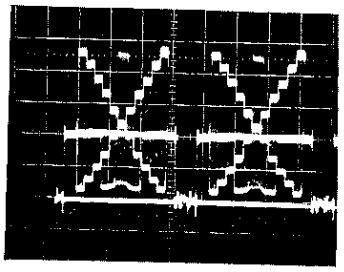
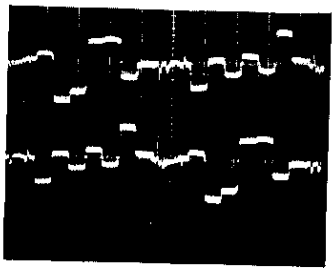
• Sensor Circuit

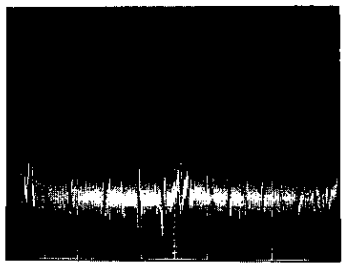
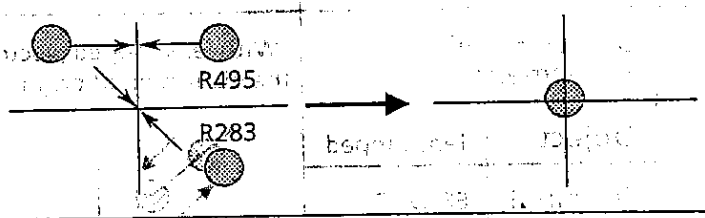
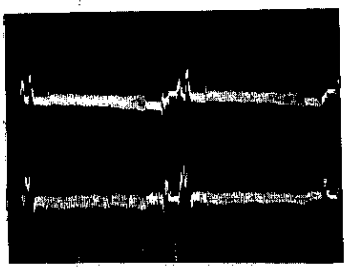
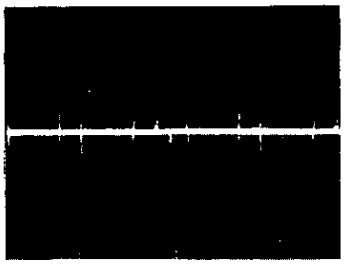


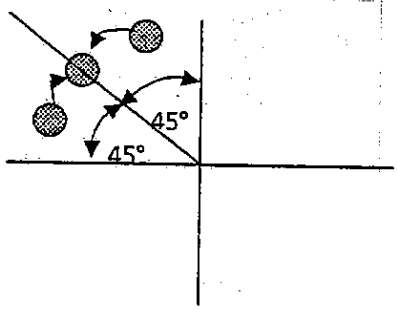
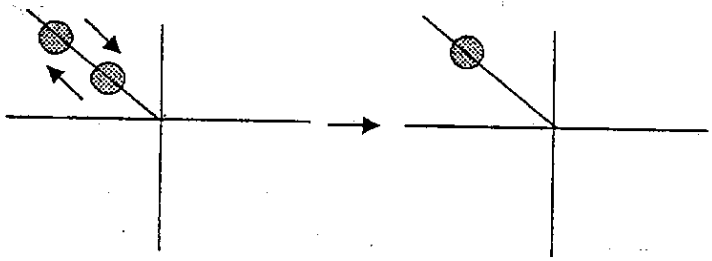
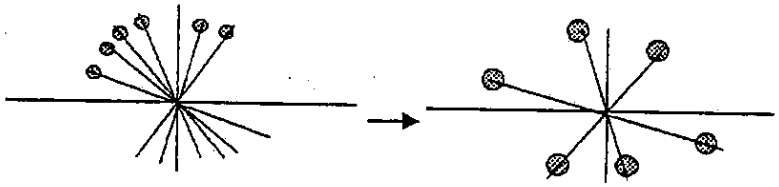
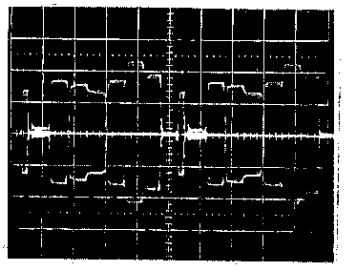
• SSG Circuit

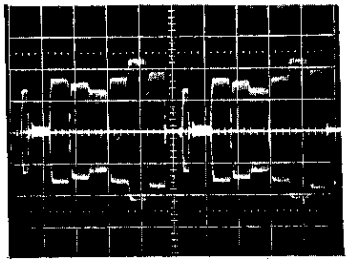
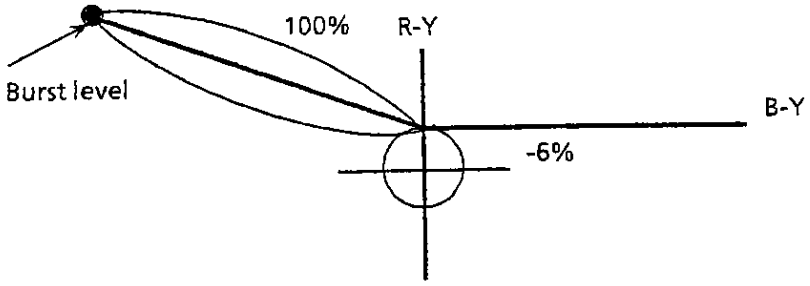


CCD Phase Adjustment

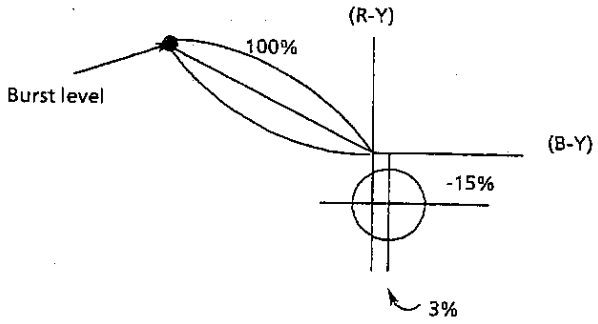
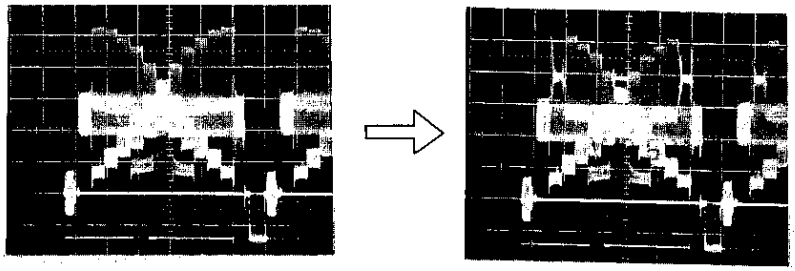
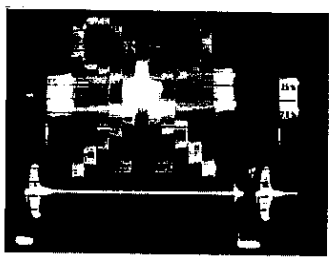
Step	Items		Procedures
3.	Fck Adjustment		Measure TP101 by counter and adjust frequency with C105 (trimmer). 9.656250MHz ± 40Hz.
	Object		
	Terminal	TP101	
	Place	C105	
	Meter	Counter	
4.	Iris Adjustment		Project gray scale. Observe TP201 by oscilloscope. Adjust R617 so that amplitude becomes 380mVp-p.
	Object	Gray scale	
	Terminal	TP201	
	Place	R617	
	Meter	Oscilloscope	 0.1Vp-p/div
5.	L-CLIP Adjustment		With lens capped, observe TP401 by oscilloscope. Adjust R221 so that scanning period and blanking period correspond.
	Object	Lens capped	
	Terminal	TP401	
	Place	R221	
	Meter	Oscilloscope	 0.05Vp-p/div
6.	AGC Adjustment		Project gray scale. Observe TP401 by oscilloscope. Adjust R203 so that amplitude becomes 450mVp-p.
	Object	Gray scale	
	Terminal	TP401	
	Place	R203	
	Meter	Oscilloscope	
7.	C-BAL Adjustment		Project color bar. Observe TP204 andTP376 simultaneously. Adjust R377 so that the signal amplitudes of TP204 and TP376 are identical level. (As line sequential signal, 1H deviated point should be compared with.)
	Object	Color bar	
	Terminal	TP204 TP376	
	Place	R377	
	Meter	Oscilloscope	 TP204 TP376 50mV/div

Step	Items		Procedures
8.	Suppress-BAL Adjustment With Lens		Project color bar. Observe TP371 by oscilloscope. Adjust R380 so that signal leakage is minimized.  50mV/div
	Object	Color bar	
	Terminal	TP371	
	Place	R380	
	Meter	Oscilloscope	
9.	FH/2 offset, B-Y FH2 offset Adjustment		With lens capped, observe TP403 and TP402 simultaneously. Adjust R283 and R495 so that in X-Y mode on oscilloscope, the dispersion of brightness point vanishes. 
	Object	Lens capped	
	Terminal	TP403 TP402	
	Place	R283 R495	
	Meter	Oscilloscope (X-Y mode)	
10.	Indoor W/B Adjustment		(1) Project gray scale. Observe TP402 by oscilloscope. Adjust R277 so that signal leakage is minimized. (2) Project gray scale. Observe TP403 by oscilloscope. Adjust R267 so that signal leakage is minimized.  50mV/div
	Object	Gray scale	
	Terminal	TP403, TP402	
	Place	R267, R277	
	Meter	Oscilloscope (H-rate)	
	W/B SW	Indoor mode	
11.	VE-BAL Adjustment		Project gray scale. Observe TP407 by oscilloscope. Adjust R583 so that signal leakage at TP407 is minimized.  50mV/div
	Object	Gray scale	
	Terminal	TP407	
	Place	R583	
	Meter	Oscilloscope (H-rate)	
12.	R-Y, C/B, B-Y C/B Adjustment		With lens capped, observe vectorscope. Adjust R407and R409 so that brightness point comes in the center of vectorscope.
	Object	Gray scale	
	Terminal	EE OUT	
	Place	R407, R409	
	Meter	Vectorscope	

Step	Items	Procedures
13.	Burst phase adjustment Object: lens capped Terminal: EE-out Place: R4 05 Meter: vectorscope	With lens capped,vectorscope in NTSC mode,adJust R4 05 so that Burst is positioned at 45°angle. 
14.	Burst OFF set adjustment Object: lens capped Terminal: EE OUT Place: C471 Meter: vectorscope	WIth lens capped ,vectorscope in NTSC mode,adJust C 471 so that the dispersion of brightness points vanishes. 
15.	C-phase adjustment Object: color bar Terminal: EE OUT Place: C473 Meter: vectorscope	1.Project color Bar chart in angle of view. 2.With vectorscope in NTSC mode,adjust C473 so that brightness points (R, G) coincide as many as possible. 
16.	R-Y Gain Adjustment Object: Color bar Terminal: TP405 Place: R425 Meter: Oscilloscope	Project color bar. Observe oscilloscope. Release H.L.Killer by R433. Release H.L.C. by R568. Adjust R425 so that RED amplitude becomes 1.8times of burst level. 

<table>
<tr><th>Step</th><th>Items</th><th>Procedures</th></tr>
<tr><td>17.</td><td>B-Y Gain Adjustment
Object: Color bar
Terminal: TP405
Place: R423
Meter: Oscilloscope</td><td>Project color bar.
Observe Oscilloscope .
Adjust R423 so that BLUE amplitude becomes 1 .5times of burst level .
  </td></tr>
<tr><td>18</td><td>Set-up Adjustment
Object: Lens Capped
Terminal: TP404
Place: R414
Meter: Oscilloscope</td><td>With lens capped, observe TP404 by oscilloscope.
Adjsut R414 so that Set-up level becomes 15m Vp-p.</td></tr>
<tr><td>19.</td><td>OUTDOOR W/B Adjustment
Object: White pattern
Terminal: EE OUT
Place: R347, 349
Meter: Vectorscope
W/B SW: Outdoor</td><td>Project white pattern. Fix color temperature conversion filter (80B) to the lens so that converted light will incide.
Ovserve vectorscope. Adjsut R347 and R349 as shown in the figure below.
 
</td></tr>
<tr><td>20.</td><td>Fluorescent W/B Adjustment
Object: White pattern
Terminal: EE OUT
Place: R343, 345
Meter: Vectorscope
W/B SW: Fluorescent</td><td>Project whit pattern under the illumination of fluorescent lamp only. Observe vectorscope. Adjust R343 and R345 so that brightness point converges in the center of vectorscope.

Note: Refer to the fluorescent lamp which the same type as the customer ussed.</td></tr>
</table>

<table>
<tr><th>Step</th><th>Items</th><th>Procedures</th></tr>
<tr><td>21.</td><td>Auto-white Balance Adjustment
Object: White pattern
Terminal: EE OUT
Place: R309, R325, R330, R333,359
Meter: Vectorscope</td><td>(1) Low Light Adjustment
Under the condition that approx. 10 Lux incident light is in W/B sensor, adjust R359 to the point that TP303 voltage changes from low to high.
(2) A/W R OFF SET, A/W OFFSET Adjustment
Project white pattern. Incident light to W/B sensor is 3200°K.
Set in Auto position and observe vectorscope.
Adjust R309 and R325 so that the brightness point on R-Y axis of vector converges to the center of vector.
(3) A/W R-Gain, A/W B-Gain Adjustment
(Distance between camera and object should be under 1m so that incident light sufficient enough comes in W/B sensor.)
Project white pattern.
Attache color temperature conversion filter "80B" to lens and W/B sensor so that converted light will incide.
Then observe vectorscope. Adjust R330 and R333 as shown in the Figure below.
 
</td></tr>
<tr><td>22.</td><td>H.L. KILLER Adjustment
Object: Gray scale
Terminal: TP404 TP405
Place: R 433
Meter: Oscilloscope (H-rate)</td><td>1.By oscilloscope, add to perform of TP404 signal and TP405 signal 1 to 1 to be composit signal.
2.Project gray scale, and set white balance switch in OUTDDOR mode.
3.Turn ON backlight switch.
4.Adjust R433 so that the 11th grade carrier of grayscale become 0.
  </td></tr>
<tr><td>23.</td><td>H.L..C SUPP Adjustment
Object: Gray scale
Terminal: TP404 TP405
Place: R 568
Meter: Oscilloscope (H-rate)</td><td>Adjust R568 so that from the state of step 22) each carrier head at 10 and 9 grades of gray scale should be even
  </td></tr>
</table>

Step	Items	Procedures
24.	BACK FOCUS Adjustment	

1) Adjustment condition

Distance of object	200 ± 1cm
Illumination	Iris open for both TELE and WIDE
Object	Siemens star

Note: Take extreme care to make this tracking adjustment, otherwise misadjusting directly affects the auto focus.

2) Adjustment procedure (Focus is in manual position.)

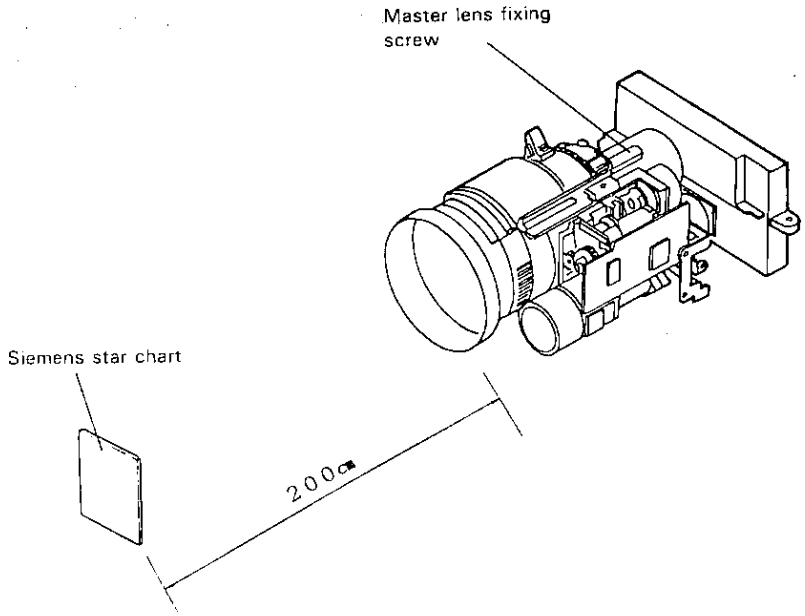
(1) Fit the center of Siemens Star to the center of monitor and loosen master lens fixing screw.

(2) Set the zoom in TELE side and by rotating adjust focus ring to the best point of lens focus.

(3) Set the zoom in WIDE, adjust to the best point of lens focus by moving the lens forward nad backward with the tracking adjusting jig or bladed screwdriver (with fine tip) in the groove of master lens.

(4) Repeat steps 2 and 3. Lens focus after adjustment of step 3 and lens focus with TELE (at this time, not to rotate focus ring) become the best points, tracing adjustment is completed.

(5) After adjustment is completed, tighten master lens fixing screw (with torque 600g.cm).



Step	Items	Procedures
25.	AUTO FOCUS Adjustment	

This adjustment should be performed when the deviation between the focus at auto focus measurieng distance and the best focus at manual focus is great.

Note: This fine adjustment should not be done when the poor focus caused by projecting an object which is disadvantageous for auto focus, or camera is inoperative.

1) Fine adjustment condition

Distance of object	200 ± 1cm
Illumination	Iris open (LIGHT character blinks in viewfinder)
Object	Specified A/F adjustment chart JIGCHART-C70

2) Fine adjustment procedure

(1) Remove bottom cover of the cabinet to expose adjusting screw.

(2) Take care to arrange the object and camera without any tilt or crook.

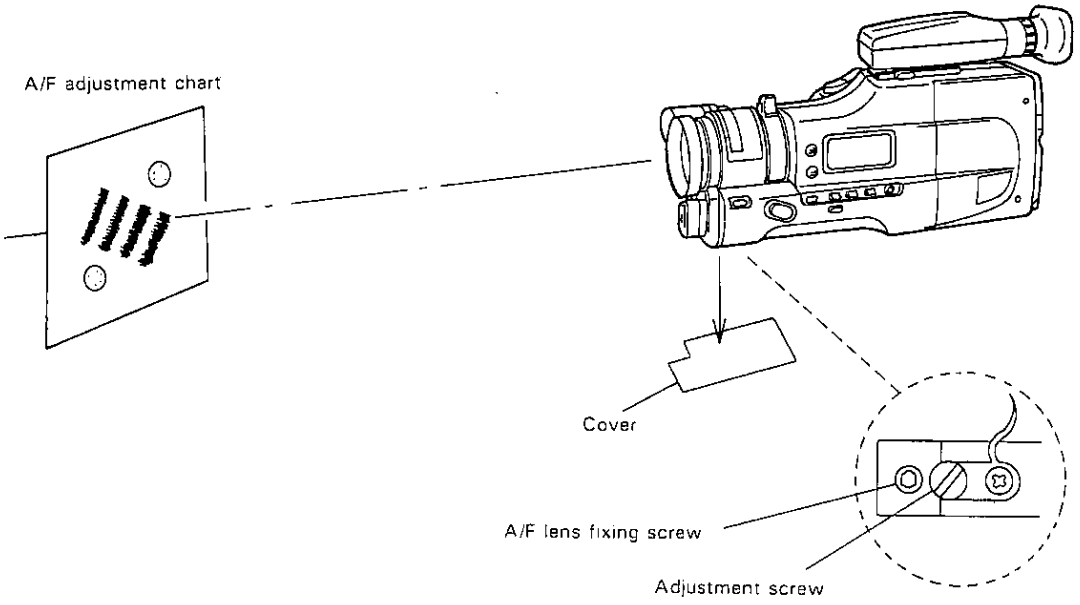
(3) Make sure that back focus adjutment is completely done. (Auto focus fine adjustment can not be done if back focus adjustment is insufficient.)

(4) Rotate the zoom ring of lens toput in TELE side and the center of specified chart to the center of monitor.

(5) See the deviation of the focus operated from 1m and side after switching auto focus in auto and the best focus at manual focus. Then, loosen auto focus lens fixing screw with hexagon wrench (1.5mm wide) and turn adjusting screw with a bladed screwdriver.

(6) Make sure tha tthe focus ring operated from 1m and side is corresponding to the best focus by manual.

(7) Tighten the fixing screw after adjustment is completed (torque 600g.cm).



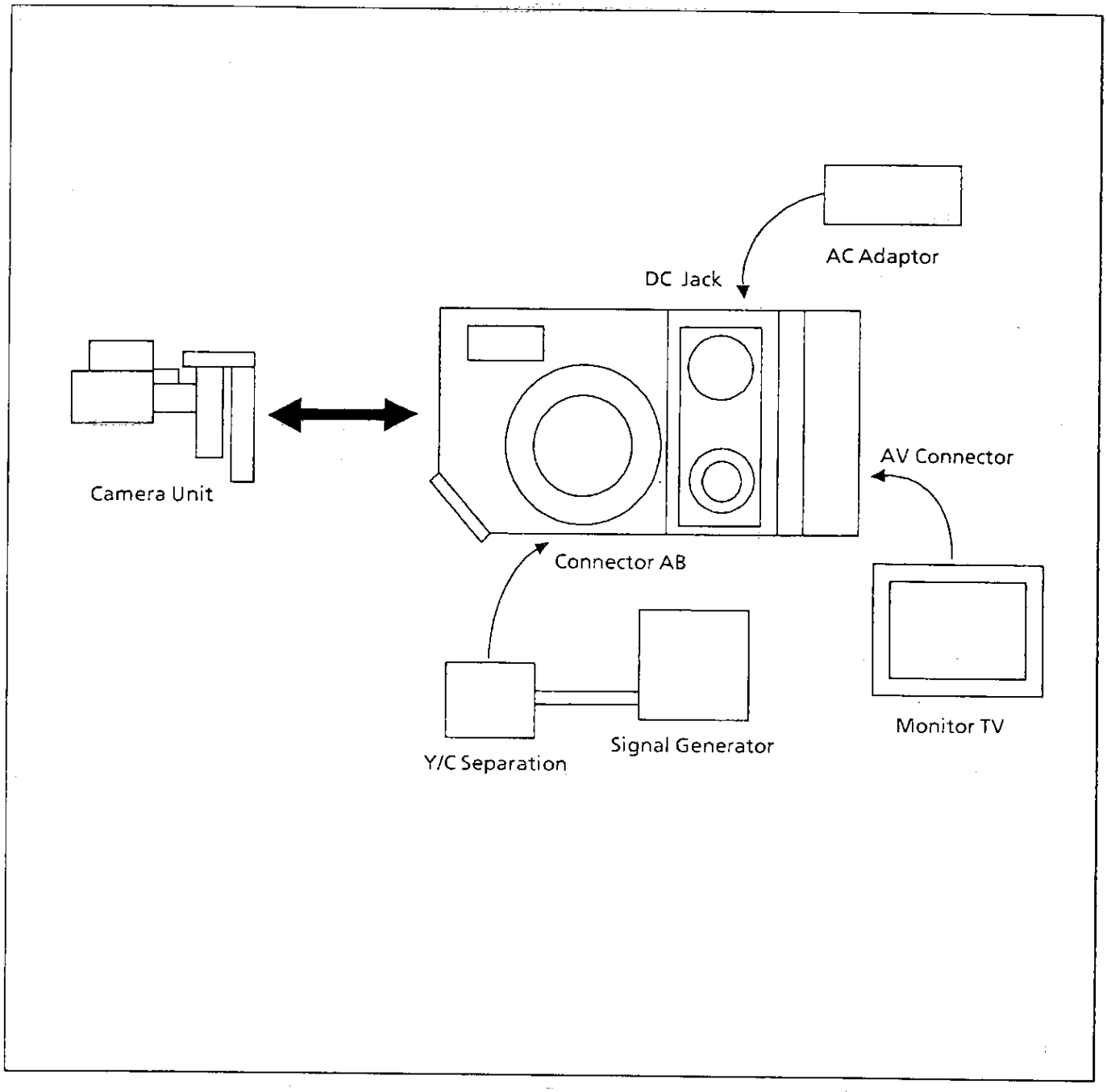
Step	Items	Procedures
26.	Viewfinder Adjustment	
	1) H-Hold	(Earth pin 4 of P01 connector.) Turn off video input signal. Connect frequency counter to pin 16 of IC01 (AN2514S). Adjust VR01 to read 15.625 ± 0.25 kHz.
	2) V-Size	Observing the picture of viewfinder, adjust VR02 so that picture amplitude becomes normal.
	3) Brightness	Observing the picture of viewfinder, adjust VR03 (brightness control) so that gradation of gray scale is optimum.
	4) Focus	Observing the picture of viewfinder, adjust VR04 so that the image of center screen becomes clear.

Note: - Before electrical adjustment -

Make sure that the unit has perfect mechanical operation (which means that mechanism adjustment has been done completely.) In case a failure occured in the electrical circuit, the defective part must be found with the meter. After that, service, replacement and adjustment should be done. Also, avoid moving any control blindly without finding the defective part by meter.

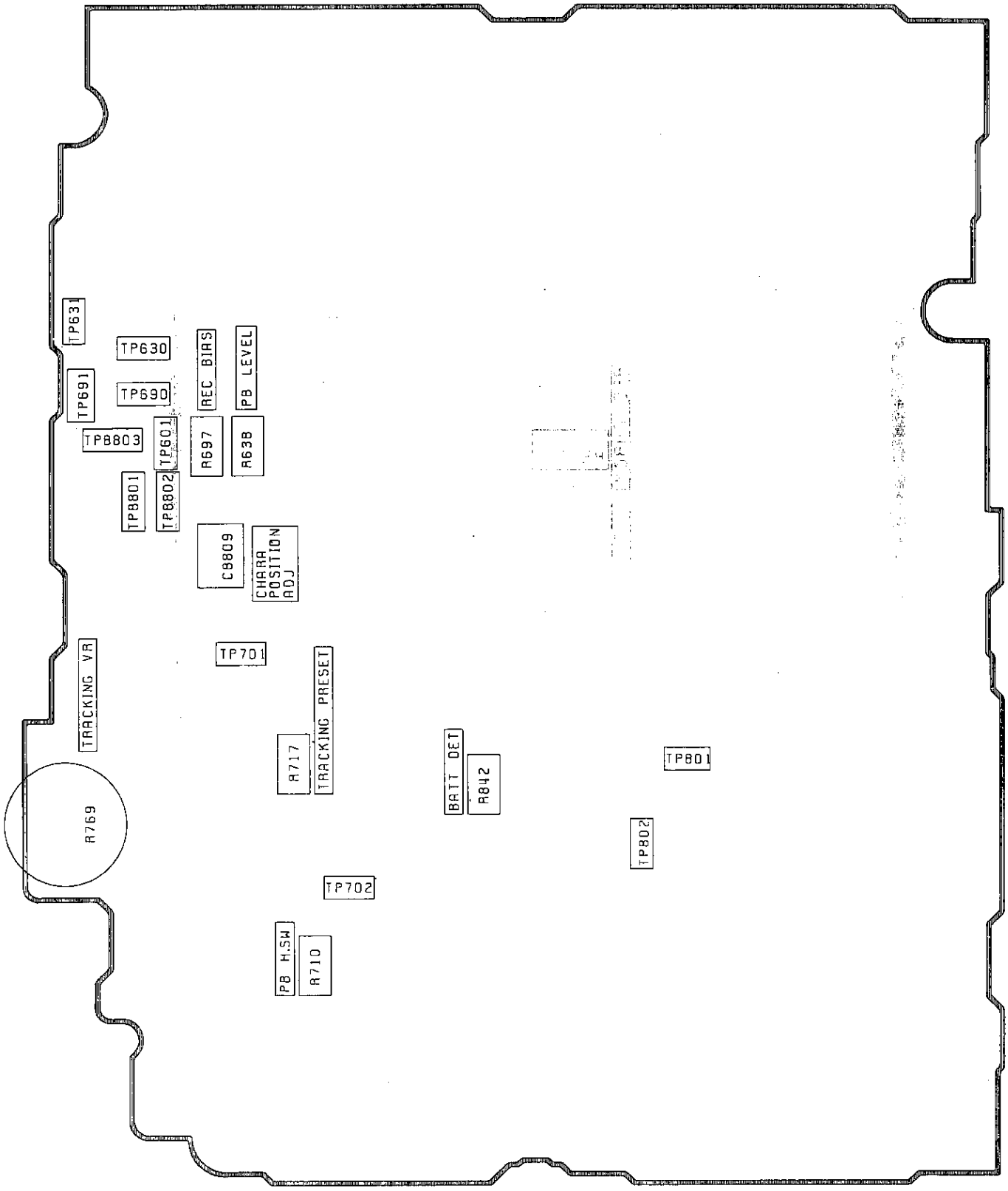
<Video Section>

Measuring InstrumentColor Monitor TV, Oscilloscope, Color Bar Generator, Frequency Counter, DC Rated Voltage Power Source, Audio Generator (CR Generator), Alignment Tape, Recording Tape (VHS spec) and VTVM

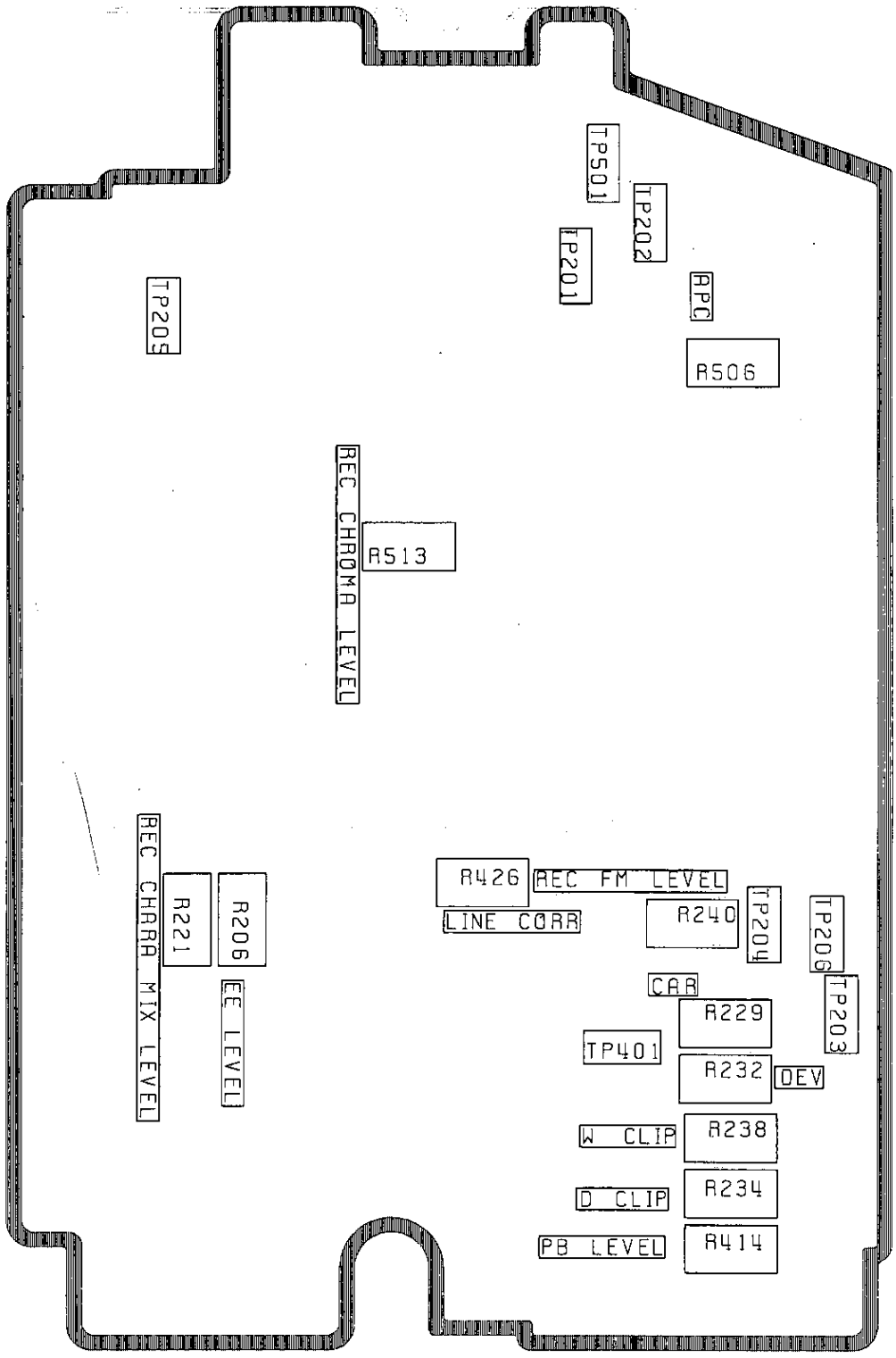


Location of Test Points and Controls

- Main Circuit

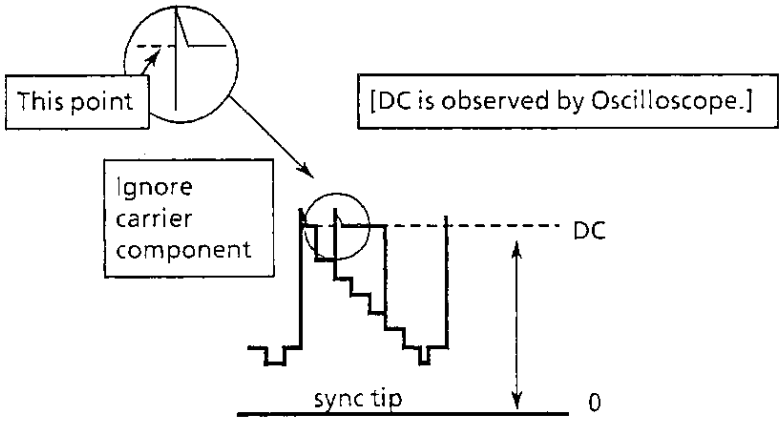


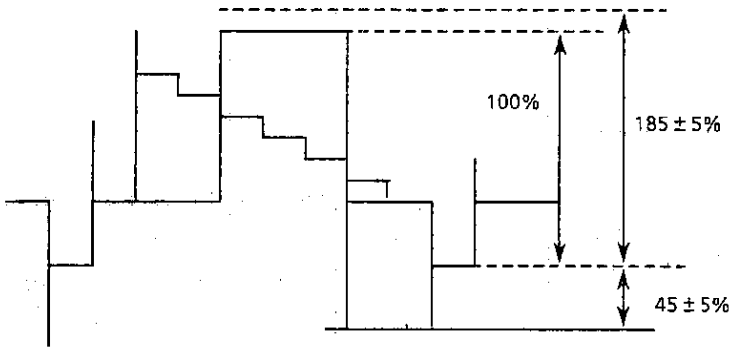
- **Y/C Circuit**


TP501
TP202
TP201
APC
TP205
R506
REC CHROMA LEVEL
R513
REC CHARA MIX LEVEL
R221
R206
EE LEVEL
R426
REC FM LEVEL
LINE CORR
R240
TP204
TP206
CAR
TP203
R229
TP401
R232
DEV
W CLIP
R238
D CLIP
R234
PB LEVEL
R414

Y/C Circuit

Step	Item	Mode	Terminal	Place	Test Signal Audio Video	Spec	Tape	Meter	Method
1.	EE level adjust	EE	TP205	R206	Color Bar	2.0 ± 0.1 Vp-p		Oscillo-scope	1) Connect oscilloscope to TP205. 2) Apply color bar signal and adjust R206 so that video output level becomes 2.0 ± 0.1Vp-p.
2.	FM carrier adjust	EE	TP204	R229	Color Bar	3.8MHz ± 50kHz		Oscillo-scope	1) Open video input terminal. 2) Connect frequency counter to TP204. 3) Adjust R229 so that reading of counter is 3.8MHz ± 50kHz.
3.	Devia-tion adjust	EE	TP204	R232	Color Bar	4.8MHz ± 50kHz		Oscillo-scope	1) Connect stabilized power supply and oscilloscope to IC201 PIN15 to observe DC voltage. 2) Adjust voltage of stabilized power supply and memorize DC voltage when reading of frequency counter is 4.8MHz. 3) Apply staircase wave and adjust R232 so that white peak becomes DC voltage as shown in step 2).

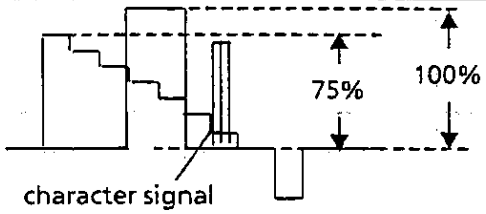


Step	Item	Mode	Terminal	Place	Signal Audio Video	Spec	Tape	Meter	Method
4.	White/ Dark clip adjust	EE	TP203	R238 White R234 Dark	Color Bar	White 185 ± 5% Dark 45 ± 5%		Oscillo-scope	1) Connect oscilloscope to TP203. 2) Apply color bar signal. 3) Adjust R238 so that white side is 185 ± 5% and adjust R234 so that dark side is 45 ± 5%.
									
5.	APC adjust	PB	TP501	R506		4.433619 MHz ± 10Hz	Record-tape	Fre-quency counter	1) Connect frequency counter to TP501. 2) Play back recorded tape. 3) Adjust R506 so that counter reading is 4.433619MHz ± 10Hz.
6.	Chroma/ Y-FM REC current adjust	REC	TP301 TP302 (GND) TP201 (trigger)	R513 (C) R240 (Y)	Color Bar	C:26mVp-p (red level) Y:140mVp-p (sync tip level)	Self REC tape	Oscillo-scope	1) Connect GND of oscilloscope to TP302 and SIG to TP301. Take care not to connect to GND side of external trigger TP201. 2) Apply color bar signal and put to REC mode. 3) Adjust R240 to minimize Y FM signal. 4) Adjust R513 so that red level of chroma signal is 26 mVp-p. 5) Adjust R240 so that FM level of sync tip is 140 m Vp-p.

Y/C CIRCUIT

Step	Item	Mode	Terminal	Place	Test Signal Audio	Test Signal Video	Spec	Tape	Meter	Method
7.	Line correlation adjust.	PB	TP401	R426			Point where output level becomes uniform.	Recorded tape	Oscilloscope	1) Connect oscilloscope to TP401. 2) Play back recorded tape. 3) Adjust R426 so that output level at TP401 becomes uniform (minimum).
8.	PB Y level adjust.	PB	TP205	R414			2.0 ± 0.1 Vp-p	Recorded tape	Oscilloscope	1) Connect oscilloscope toTP205. 2) Play back recorded color bar tape.
9.	Recording character level adjustment		TP206	R221				color bar	Oscilloscope	3) Adjust R414 so that video output level becomes 2.0 ± 0.1 Vp-p.

1) Connect an oscilloscope to TP206
2) Input color bar signal.
3) Connect LCD unit with viewfinder to generate character signal.
4) Adjust R221 so that character level at TP206 should be 75% of Y signal, that is same as white level of stair casewave.

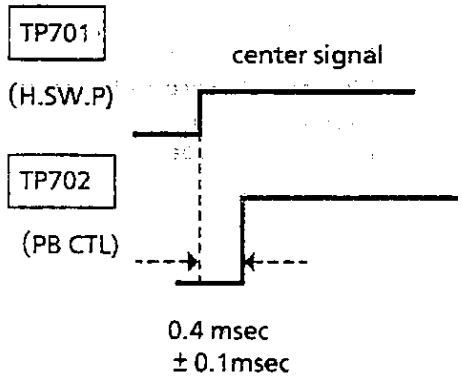


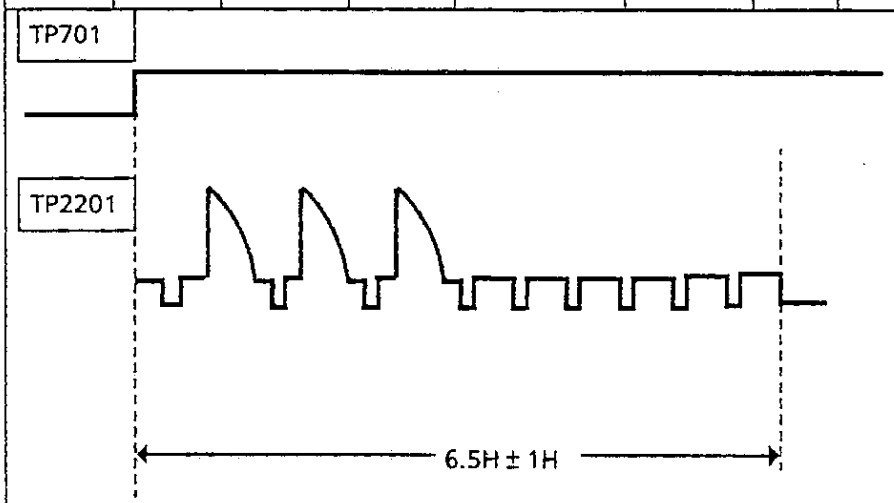
Audio Circuit

1.	PB level adjust	PB 1kHz	Audio out	R638		-8dB ± 1dB (308 mVrms)		VTVM	1) Connect VTVM to audio out. 2) Play back alignment tape. 3) Adjust R638 so that output is -8dBm (308 mVrms).
2.	Bias current adjust	REC	TP631 TP630	R697		2.2 ± 0.1mV	Alignment tape	VTVM	1) Connect VTVM to TP631 (cold) and TP630 (hot). 2) Put in REC mode and adjust R697 to obtain 2.2 ± 0.1mV.

Servo Circuit

Step	Item	Mode	Terminal	Place	Test Signal Audio Video	Spec	Tape	Meter	Method
1.	Track-ing preset	PB	TP702 (PB-CTL) TP701 (trigger)	R717		0.4 msec ± 0.2 msec	Align-ment		1) At TP701 (H.SAW P) take trigger. 2) Play back alignment tape and make tracking control in center clip position. 3) Adjust R717 so that rising edge of TP702 (PB CTL pulse) is 0.4msec ± 0.2msec from TP701 (H. SW. P). Note: As TP702 waveform fluctuates, adjust with center value.
2.	H SW P adjust	PB	TP2201 TP701 (trigger)	R710		6.5H ± 1H	Align-ment		1) Play back alignment tape and set Tracking control in center clip position. 2) By TP2201 (H.SW.P), adjust R710 so that initial position of vertical sync of TP701 (video output) from H.SW.P rising edge is 6.5H ± 1H.





Character Generator Adjustment

Step	Item	Mode	Terminal	Place	Test Signal Audio Video	Spec	Tape	Meter	Method
1.	OSD adjust	EE	TP8801 TP8802	C8809		5.38MHz ± 50kHz		Frequency counter	1) Connect TP8801 (pin 22 of IC8802) and TP8802 (IC8802 power supply). 2) Turn power supply ON. 3) Adjust trimmer C8809 so that frequency becomes 5.38MHz ± 50kHz at pin 12 of IC8802.

System Controller Circuit Adjustment

Step	Item	Mode	Terminal	Place	Test Signal Audio Video	Spec	Tape	Meter	Method
1.	Battery alarm adjust	REC	TP801	R842		V/F inside display "C000"	Self REC	Digital Volt-meter	1) Connect a resistor (12K + 1.8K) between TP801 and Ground. 2) Turn power supply ON. 3) Turn Camera/PB switch to camera side. 4) Make power supply boltage 9.3V at DC jack input part. 5) Adjust R842 so that counter diaply inside of viewfinder becomes "C000".

DC VOLTAGE TABLE

- **Voltage of IC**
- **Circuit: Head Amp**

D: Pulse

IC PIN No.	MODE					Remarks
	Stop (SP)	REC		PLAY		
		SP	LP	SP	LP	
IC301 1	0	0	0	1.6	1.6	VHIH118042A-1
2	0	0	0	0.7	0.7	
3	0	0	0	0	0	
4	0	0.4	0.4	0	0	
5	0.8	5.0	5.2	0.9	0.9	
6	0	0	0	0	0	
7	0	0	0	0.7	0.7	
8	0	0	0	0	0	
9	0	0	0	0	0	
10	0	0.4	0.4	0	0	
11	0.9	5.1	5.1	0.9	0.9	
12	0	0	0	0.7	0.7	
13	0	0	0	0	0	
14	0	0	0	0	0	
15	0	0.5	0.5	0	0	
16	0.9	5.1	5.1	0.9	0.9	
17	0	0	0	0.9	0.9	
18	0	0	0	0	0	
19	0	0.5	0.5	0	0	
20	0.9	5.0	5.0	0.9	0.9	
21	0	0	0	0	0	
22	0	0	0	1.6	1.6	
23	0	2.1	2.1	0	0	
24	0.9	5.1	5.1	0.9	0.9	
25	0	2.1	2.1	0	0	
26	0.6	0	0	0.6	0.6	
27	0	2.1	2.1	0	0	
28	0	0	0	0	0	
29	0	0	0	0	0	
30	0	3.5	3.5	0	0	
31	0	0	0	0	0	
32	3.3	D	D	D	D	0 ~ 3.3V
33	3.3	D	D	D	D	0 ~ 3.3V
34	0	D	D	D	D	0 ~ 3.3V
35	3.3	D	D	D	D	0 ~ 3.3V
36	5.2	5.2	5.2	5.2	5.2	
37	5.1	2.6	2.6	2.6	2.6	
38	0	0	0	0	0	
39	0	D	D	D	D	0 ~ 5.1V
40	0	0	0	2.4	2.4	
41	0	0.5	0.5	2.9	2.9	
42	0	0	0	0	0	
43	0	0	0	4.8	4.8	
44	0	0	0	1.6	1.6	

■ Voltage IC
■ Circuit: Y/C

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
IC201	1	5.0	5.0	5.0	5.0	5.0	AN3231FA
	2	2.9	2.9	2.9	2.9	2.9	
	3	2.9	2.9	2.9	2.9	2.9	
	4	2.2	2.2	2.2	2.2	2.2	
	5	2.9	2.9	2.9	2.9	2.9	
	6	3.3	3.3	3.3	3.4	3.4	
	7	5.0	5.0	5.0	5.0	5.0	
	8	2.2	2.2	2.2	2.3	2.3	
	9	0	0	0	0	0	
	10	1.8	1.8	1.8	1.8	1.8	
	11	2.5	2.5	2.5	2.5	2.5	
	12	2.1	2.1	2.1	2.1	2.1	
	13	0.5	0.5	2.0	0.5	2.0	
	14	2.1	2.1	2.1	2.1	2.1	
	15	2.0	2.0	2.0	2.1	2.1	
	16	2.8	2.8	2.8	2.8	2.8	
	17	3.0	3.0	3.0	3.0	3.0	
	18	3.2	3.2	3.2	3.7	3.7	
	19	0	0	0	3.3	3.3	
	20	0	0	0	3.3	3.3	
	21	0	0	0	4.9	4.9	
	22	0	0	0	3.8	3.8	
	23	0	0	0	3.8	3.8	
	24	0	0	0	2.6	2.6	
	25	0	0	0	2.6	2.6	
	26	0	0	0	1.8	1.8	
	27	0	0	0	0.6	0.6	
	28	0	0	0	4.9	4.9	
	29	0	0	0	2.8	2.8	
	30	0	0	0	2.5	2.5	
	31	0	0	0	1.5	1.5	
	32	0	0	0	3.4	3.4	
	33	0	0	0	0	0	
	34	0	0	0	2.8	2.8	
	35	0.1	0.1	0.1	2.2	2.2	
	36	0	0	0	2.6	2.6	
	37	0	0	0	2.1	2.1	
	38	4.3	4.3	4.3	0.1	0.1	
	39	2.3	2.3	2.3	2.1	2.1	
	40	2.4	2.4	2.4	2.4	2.4	
	41	0	0	0	0	0	
	42	2.2	2.2	2.2	2.2	2.2	
	43	2.9	2.8	2.8	2.8	2.8	
	44	0.4	0.4	0.4	0.4	0.4	
	45	2.4	2.4	2.4	2.4	2.4	
	46	2.8	2.3	2.8	2.7	2.7	
	47	2.2	2.2	2.2	1.9	1.9	
	48	2.1	2.1	2.1	1.9	1.9	

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
IC401	1	9.0	9.0	9.0	9.0	9.0	MS69653
	2	0	0	0	0	0	
	3	5.1	5.1	5.1	5.1	5.1	
	4	3.3	3.3	3.3	3.3	3.3	
	5	3.1	3.1	3.1	3.1	3.1	
	6	2.3	2.3	2.3	2.3	2.3	
	7	1.7	1.7	1.7	1.7	1.7	
	8	5.1	5.1	5.1	5.1	5.1	
IC501	1	0.4	0.4	0.4	0.4	0.4	TA8604F
	2	4.5	4.5	4.5	4.5	4.5	
	3	5.0	5.0	5.0	5.0	5.0	
	4	2.8	2.8	2.8	2.8	2.8	
	5	0	2.1	2.1	2.1	2.1	
	6	5.0	5.0	5.0	5.0	5.0	
	7	2.3	2.3	2.3	2.3	2.3	
	8	2.7	2.7	2.7	2.6	2.6	
	9	5.0	5.0	5.0	5.0	5.0	
	10	3.1	3.1	3.1	3.1	3.1	
	11	0	0	0	0	0	
	12	4.4	4.4	4.4	4.4	4.4	
	13	3.1	3.1	3.1	3.1	3.1	
	14	2.7	2.7	2.7	2.7	2.7	
	15	3.5	3.5	3.5	3.5	3.5	
	16	2.5	2.5	2.5	4.4	4.4	
	17	5.0	5.0	5.0	5.0	5.0	
	18	2.6	2.6	2.6	2.5	2.5	
	19	2.9	2.9	2.9	2.9	2.9	
	20	2.5	2.5	2.5	2.5	2.5	
	21	5.0	5.0	5.0	5.0	5.0	
	22	2.7	2.7	2.7	1.7	1.7	
	23	0	0	0	0	0	
	24	1.7	1.7	1.7	2.7	2.7	
	25	3.8	3.8	3.8	3.2	3.2	
	26	2.4	2.4	2.4	2.4	2.4	
	27	0	0	0	0	0	
	28	2.7	2.7	2.7	2.7	2.7	
	29	2.7	2.7	2.7	2.8	2.8	
	30	2.8	2.8	2.8	2.8	2.8	
IC202	1	1.7	1.7	1.7	1.7	1.7	CX20095A
	2	1.7	1.7	1.7	1.7	1.7	
	3	1.7	1.7	1.7	1.6	1.6	
	4	2.5	2.5	2.5	2.5	2.5	
	5	0	0	0	0	0	
	6	2.5	2.5	2.5	2.5	2.5	
	7	0	0	0	0	0	
	8	1.7	1.7	1.7	1.6	1.6	
	9	1.8	1.8	1.8	1.7	1.7	

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
	10	1.8	1.8	1.8	1.8	1.8	
	11	1.7	1.7	1.7	1.7	1.7	
	12	1.9	1.9	1.9	1.9	1.9	
	13	2.1	2.1	2.1	2.1	2.1	
	14	5.1	5.1	5.1	5.1	5.1	
IC203	1	3.0	3.0	3.0	3.0	3.0	NJM2234M
	2	0	0	0	4.2	4.2	
	3	3.0	3.0	3.0	3.0	3.0	
	4	0	0	0	0	0	
	5	3.0	3.0	3.0	3.0	3.0	
	6	5.0	5.0	5.0	5.0	5.0	
	7	2.2	2.2	2.2	2.2	2.2	
	8	0	0	0	0	0	

■ **Voltage IC**
■ **Circuit: Chroma**

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
IC4401	1	0	0	0	0.8	0.8	TA8607F
	2	0	0	0	3.0	3.0	
	3	0	0	0	1.4	1.4	
	4	0	0	0	0	0	
	5	0	0	0	2.6	2.6	
	6	0	0	0	0	0	
	7	0	0	0	3.4	3.4	
	8	0	0	0	0	0	
	9	0	0	0	0	0	
	10	0	0	0	0	0	
	11	0	0	0	3.4	3.4	
	12	0	0	0	0.1	0.1	
	13	0	0	0	3.4	3.4	
	14	0	0	0	4.9	4.9	
	15	0	0	0	0	0	
	16	0	0	0	2.1	2.1	
	17	0	0	0	2.9	2.9	
	18	0	0	0	0	0	
	19	0	0	0	0	0	
	20	0	0	0	0	0	
	21	0	0	0	0	0	
	22	0	0	0	0	0	
	23	0	0	0	4.9	4.9	
	24	0	0	0	2.0	2.0	

D: Pulse

IC PIN No.	MODE					Remarks
	Stop (SP)	REC		PLAY		
		SP	LP	SP	LP	
IC8802						UPD6105G
1	D	D	D	D	D	0~5.1V
2	D	D	D	D	D	0~5.1V
3	D	D	D	D	D	0~5.1V
4	0	0	0	0	0	
5	D	D	D	D	D	0~5.1V
6	5.2	5.2	5.2	5.2	5.2	
7	3.0	3.0	3.0	3.0	3.0	
8	3.0	3.0	3.0	3.0	3.0	
9	0	0	0	0	0	
10	0	0	0	0	0	
11	0	0	0	0	0	
12	2.2	2.2	2.2	2.2	2.2	
13	0	0	0	0	0	
14	0	0	0	0	0	
15	0	0	0	0	0	
16	0	0	0	0	0	
17	D	D	D	D	D	0~5.1V
18	0	0	0	0	0	
19	0	0	0	0	0	
20	D	D	D	D	D	0.2~5.0V
21	0	0	0	0	0	
22	D	D	D	D	D	0.4~5.0V
23	5.2	5.2	5.2	5.2	5.2	
24	0.7	0.7	0.7	0	0	

■ Voltage IC
■ Circuit: System Control

D: Pulse

IC PIN No.	MODE					Remarks
	Stop (SP)	REC		PLAY		
		SP	LP	SP	LP	
IC801 1	4.8	0	0	0	0	IX0472GE
2	0.1	4.3	4.3	0.1	0.1	
3	4.2	4.2	4.2	0.1	0.1	
4	4.3	4.2	4.2	4.3	4.3	
5	5.1	5.1	5.1	5.1	5.1	
6	3.1	1.2	1.2	1.3	1.3	
7	5.1	5.1	5.1	5.1	5.1	
8	5.1	5.1	5.1	5.1	5.1	
9	5.1	5.1	5.1	5.1	5.1	
10	5.2	D	D	D	D	0~5.2V
11	5.2	D	D	D	D	0~5.2V
12	D	D	D	D	D	0~5.2V
13	D	D	D	D	D	0~5.2V
14	D	D	D	D	D	0~5.2V
15	D	D	D	D	D	0~5.2V
16	0	2.5	2.5	2.5	2.5	

IC PIN No.	MODE					Remarks
	Stop (SP)	REC		PLAY		
		SP	LP	SP	LP	
17	5.2	5.2	5.2	5.2	5.2	
18	D	D	D	D	D	0~5.2V
19	0	2.5	2.5	2.5	2.5	
20	0	0	0	0	0	
21	0	0	0	0	0	
22	0	0	0	0	0	
23	0	0	0	0	0	
24	0	0	0	0	0	
25	5.2	5.2	5.2	5.2	5.2	
26	2.4	2.4	2.4	2.4	2.4	
27	1.5	1.5	1.5	1.5	1.5	
28	2.5	2.5	2.5	2.5	2.5	
29	0	0	0	0	0	
30	5.2	5.2	5.2	5.2	5.2	
31	5.2	5.2	5.2	5.2	5.2	
32	0	0	0	0	0	
33	5.0	0	0	0	0	
34	5.2	0	0	5.2	5.2	
35A	0	0	0	0	0	
36	5.2	5.2	5.2	5.2	5.2	
37	5.2	5.2	5.2	5.2	5.2	
38	0	0	0	0	0	
39	0	0	0	0	0	
40	0	0	0	0	0	
41	0	0	0	0	0	
42	0	5.0	5.0	0	0	
43	0	0	0	4.1	4.1	
44	0	4.2	4.2	0	0	
45	0.1	0	0	0	0	
46	4.3	4.3	4.3	0.1	0.1	
47	0.1	0.1	0.1	0.1	0.1	
48	5.0	5.0	5.0	5.0	5.0	
49	0	4.3	4.3	0	0	
50	0	0	0	0	0	
51	0	0	0	0	0	
52	0	0	0	0	0	
53	5.2	5.2	5.2	5.2	5.2	
54	0.1	0	0	0	0	
55	0	0	0	0	0	
56	0	0	0	0	0	
57	0	5.2	5.2	5.2	5.2	
58	0	5.2	5.2	5.2	5.2	
59	5.2	5.2	5.2	5.2	5.2	
60	0	0	0	0	0	
61	0.1	0.1	0.1	0.1	0.1	
62	0.1	0.1	0.1	0.1	0.1	
63	5.2	5.2	5.2	5.2	5.2	
64	0	0	0	0	0	
65	0	0	0	0	0	

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
	66	0	0	0	0	0	
	67	5.2	5.2	5.2	5.2	5.2	
	68	0	0	0	0	0	
	69	5.1	5.1	5.1	5.1	5.1	
	70	4.4	4.4	4.4	0	0	
	71	5.2	0.1	0.1	0.1	0.1	
	72	4.8	0	0	4.8	4.8	
IC802	1	5.2	5.2	5.2	5.2		PST529DM
	2	6.6	6.6	6.6	6.6		
	3	0	0	0	0		
IC803	1	0	4.3	4.3	0	0	TC4581F
	2	0.1	4.3	4.3	0.1	0.1	
	3	0	0	0	0	0	
	4	0	5.2	5.2	0	0	
	5	5.2	5.2	5.2	5.2	5.2	
IC805	1	0	0	0	0	0	TA7291F
	2	0	0	0	0	0	
	3	0	0	0	0	0	
	4	4.6	4.6	4.6	4.3	4.3	
	5	7.9	7.9	7.9	7.9	7.9	
	6	0	0	0	0	0	
	7	0	0	0	0	0	
	8	0	0	0	0	0	
	9	0	0	0	0	0	
	10	0	0	0	0	0	
	11	9.8	9.8	9.8	9.8	9.8	
	12	0	0	0	0	0	
	13	2.0	0.6	0.6	0.6	0.6	
	14	0	0	0	0	0	
	15	9.8	9.8	9.8	9.8	9.8	
	16	0	0	0	0	0	

■ **Voltage IC**
■ **Circuit: Audio**

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
IC630	1	9.1	9.0	9.0	9.1	9.1	BA7755
	2	0	0	0	0	0	
	3	0	0	0	0	0	
	4	4.2	4.2	4.2	0	0	
	5	6.6	6.6	6.6	6.6	6.6	
IC6600	1	2.6	2.6	2.6	2.6	2.6	RH-IZ0093TAZZ
	2	2.6	2.5	2.5	2.6	2.6	
	3	0	0	0	0	0	
	4	4.8	0	0	4.8	4.8	
	5	2.6	2.6	2.6	2.6	2.6	
	6	0	0	0	0	0	
	7	0	0	5.1	0	5.1	
	8	5.1	5.1	5.1	5.1	5.1	
	9	0	0	0	0	0	
	10	0	0	0	0	0	
	11						
	12	2.6	2.5	2.5	2.6	2.6	
	13	4.2	4.2	4.2	0.1	0.1	
	14	2.5	2.5	2.5	2.6	2.5	
	15	0	0	0	0	0	
	16	0	0	0	0	0	
	17	0	0	0	0	0	
	18	0	0	0	0	0	
	19	0	0	0	0	0	
	20	0	0	0	0	0	

■ **Voltage IC**
■ **Circuit: Servo**

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
IC701	1	0	0	0	0	0	IX0464GE
	2	0	0	0	0	0	
	3	5.2	2.6	2.6	2.6	2.6	
	4	0	2.5	2.5	2.5	2.5	
	5	0	0	0	0	0	
	6	0	0	0	0	0	
	7	0	0	0	0	0	
	8	0	0	0	0	0	
	9	0	0	0	0	0	
	10	0	0.1	0.1	0.1	0.1	
	11	2.6	2.6	2.6	2.6	2.6	
	12	0	0	0	0	0	
	13	0	0	0	0	0	

IC PIN No.	MODE					Remarks
	Stop (SP)	REC		PLAY		
		SP	LP	SP	LP	
14	0.1	0.1	0.1	0.1	0.1	
15	0	0	0	0	0	
16	0	0	0	0	0	
17	0	0	0	0	0	
18	0.4	0.4	0.4	0.4	0.4	
19	0	0	0	0	0	
20	0	0.1	0.1	0	0	
21	0	0	5.1	0	5.1	
22	0.1	0.1	5.1	0.1	5.1	
23	2.7	2.7	3.3	2.7	3.3	
24	0.7	2.6	2.6	2.6	2.6	
25	0	0	0	0	0	
26	0.3	2.7	2.7	2.8	2.8	
27	0	0	0	0	0	
28	0.1	0	0	0	0	
29	0	0	0	0	0	
30	2.2	2.2	2.0	2.2	2.0	
31	5.2	5.2	5.2	5.2	5.2	
32	2.6	2.1	2.1	2.6	2.6	
33	0	0	0	0	0	
34	2.6	3.0	3.0	2.6	2.6	
35	5.2	5.1	5.1	5.2	5.2	
36	2.5	2.2	2.1	2.2	2.1	
37	0	0	0	0	0	
38	2.6	2.5	2.5	2.5	2.5	
39	2.6	0	0	0	0	
40	2.6	2.5	2.5	2.5	2.5	
41	2.6	0	0	0	0	
42	0	0	0	0	0	
43	5.2	2.5	2.5	2.5	2.5	
44	2.5	2.7	2.7	2.6	2.6	
IC702 1	5.2	2.6	2.6	2.6	2.6	IR3P71
2	2.6	2.6	2.6	2.6	2.6	
3	0	0	0	0	0	
4	2.6	2.6	2.6	2.6	2.6	
5	0	0	0	0	0	
6	2.6	2.6	2.6	2.6	2.6	
7	0	0	0	0	0	
8	2.2	2.3	2.3	2.3	2.3	
9	0.7	0.8	0.8	0.8	0.8	
10	4.5	2.9	2.9	1.3	1.3	
11	0	2.9	2.9	1.1	1.1	
12	4.5	3.3	3.2	0.8	0.8	
13	4.5	3.6	3.5	0.8	0.8	
14	0	2.9	3.0	2.1	2.1	
15	5.1	2.5	5.2	2.5	2.5	
16	5.2	5.2	5.2	5.2	5.2	
17	4.5	2.7	2.7	2.7	2.7	

IC PIN No.		MODE					Remarks
		Stop (SP)	REC		PLAY		
			SP	LP	SP	LP	
	18	0.3	2.9	2.9	2.6	2.6	
	19	2.7	3.0	3.0	2.7	2.7	
	20	0	0	0	0	0	
	21	2.6	2.8	2.8	2.6	2.6	
	22	2.6	2.6	2.6	2.6	2.6	
	23	0	0	0	0	0	
	24	2.6	2.6	2.6	2.6	2.6	
	25	2.6	2.6	2.6	2.6	2.6	
	26	0	0	0	0	0	
	27	0.1	2.6	2.6	2.6	2.6	
	28	0	0	0	4.1	4.1	
	29	0	4.2	4.2	0.1	0.1	
	30	0	0	0	0	0	
	31	3.6	3.6	3.6	3.6	3.6	
	32	5.1	4.2	4.2	4.2	4.2	
	33	5.2	1.9	1.9	1.9	1.9	
	34	5.2	5.2	5.2	5.2	5.2	
	35	0	0	0	0	0	
	36	0	0	0	0	0	
IC703	1	0.6	2.6	2.6	2.6	2.6	NJM2902M
	2	3.1	2.6	2.6	2.6	2.6	
	3	2.6	2.6	2.6	2.6	2.6	
	4	5.2	5.2	5.2	5.2	5.2	
	5	0.8	2.6	2.7	2.6	2.7	
	6	2.2	3.1	2.4	3.1	2.4	
	7	0.8	2.6	2.6	2.6	2.6	
	8	2.6	2.6	2.6	2.6	2.6	
	9	2.6	2.6	2.6	2.6	2.6	
	10	2.6	2.6	2.6	2.6	2.6	
	11	0	0	0	0	0	
	12	2.6	2.6	2.6	2.6	2.6	
	13	2.6	2.6	2.6	2.6	2.6	
	14	1.3	2.7	2.7	2.7	2.7	
IC704	1	8.4	8.4	8.4	8.4	8.4	NJM2D49C
	2	0	0	0	0	0	
	3	5.0	5.0	5.0	5.0	5.0	
	4	5.1	2.0	2.0	2.0	2.0	
	5	0.8	1.8	1.8	1.8	1.8	
	6	5.0	5.0	5.0	5.0	5.0	
	7	9.8	6.6	6.4	6.6	6.6	
	8	0	0	0	0	0	
	9	9.8	8.0	8.4	8.0	8.4	
	10	0.8	1.6	1.6	1.6	1.6	
	11	5.2	2.0	2.0	2.0	2.0	
	12	3.7	3.7	3.7	3.7	3.7	
	13	2.7	2.7	2.7	2.7	2.7	
	14	5.0	5.0	5.0	5.0	5.0	

■ Voltage of Transistor
■ Circuit: Y/C, H. Amp.

TR No.	MODE															Remarks
	Stop			REC						PLAY						
				SP			LP			SP			LP			
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	( ) Indicate Terminal No. of pairs TR.
Q201	2.8	5.0	3.0	2.8	5.0	3.0	2.8	5.0	3.0	2.8	5.0	3.0	2.8	5.0	3.0	XN6501(6)(1)(2)
Q201	2.2	5.0	2.8	2.2	5.0	2.8	2.2	5.0	2.8	2.2	5.0	2.8	2.2	5.0	2.8	XN6501(5)(3)(4)
Q204	3.0	2.8	0	3.0	2.8	0	3.0	2.8	0	3.0	2.8	0	3.0	2.8	0	2SC3938
Q205	0	0	5.1	0	0	5.1	0	5.0	0	0	0	5.1	0	5.0	0	UN5213
Q206	2.8	5.0	3.4	2.8	5.0	3.4	2.8	5.0	3.4	2.8	5.0	3.4	2.8	5.0	3.4	2SD1819A
Q207	0.4	5.0	1.0	0.4	5.0	1.0	0.4	5.0	1.0	0.4	5.0	1.0	0.4	5.0	1.0	2SD1819A
Q208	1.7	5.1	2.3	1.7	5.1	2.3	1.7	5.1	2.3	1.7	5.1	2.3	1.7	5.1	2.3	2SD1819A
Q209	5.1	0	5.2	5.1	0	5.2	5.1	0	5.2	5.1	0	5.2	5.1	0	5.2	UN5113
Q301	0	0	0	0	0	5.1	0	0	5.1	0	0	0	0	0	0	UN5213
Q401	0	0	4.3	0	0	4.3	0	0	4.3	0	0	0.1	0	0	0.1	UN5213
Q402	1.3	4.5	1.8	1.3	4.5	1.8	1.3	4.5	1.8	1.3	4.5	1.8	1.3	4.5	1.8	XN4601(6)(1)(5)
Q402	2.4	5.1	4.5	2.4	5.1	4.5	2.4	5.1	4.5	2.4	5.1	4.5	2.4	5.1	4.5	XN4601(4)(3)(2)
Q403	1.9	5.1	2.4	1.9	5.1	2.4	1.9	5.1	2.4	1.9	5.1	2.4	1.9	5.1	2.4	2SD1819A
Q404	2.7	9.0	3.3	2.7	9.0	3.3	2.7	9.0	3.3	2.7	9.0	3.3	2.7	9.0	3.3	2SD1819A
Q405	1.5	0	0.9	1.5	0	0.9	1.5	0	0.9	1.5	0	0.9	1.5	0	0.9	2SB1218A
Q501	1.7	5.1	2.3	1.7	5.1	2.3	1.7	5.1	2.3	1.7	5.1	2.3	1.7	5.1	2.3	2SD1819A
Q502	0.7	0	0	0.7	0	0	0.7	0	0	0.7	0	0	0.7	0	0	2SB1218A
Q503	1.6	3.4	2.2	1.6	3.4	2.2	1.6	3.4	2.2	1.6	3.4	2.2	1.6	3.4	2.2	XN6501(5)(3)(4)
Q503	2.8	5.0	3.4	2.8	5.0	3.4	2.8	5.0	3.4	2.8	5.0	3.4	2.8	5.0	3.4	XN6501(6)(1)(2)
Q4401	0	0	0	0	0	0	0	0	0	2.3	4.9	2.9	2.3	4.9	2.9	2SD1819A
Q5501	0	0	0	0	0	0	0	0	0	1.3	3.4	1.9	1.3	3.4	1.9	XN6501(5)(3)(4)
Q5501	0	0	0	0	0	0	0	0	0	2.8	4.9	3.4	2.8	4.9	3.4	XN6501(6)(1)(2)

■ Voltage of Transistor
■ Circuit: System Control

TR No.	MODE															Remarks
	Stop			REC						PLAY						
				SP			LP			SP			LP			
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	( ) Indicate Terminal No. of pairs TR.
Q801	5.4	0	4.9	5.4	0	4.9	5.4	0	4.9	5.4	0	4.9	5.4	0	4.9	2SA1576R
Q802	5.2	9.8	5.4	5.2	9.8	5.4	5.2	9.8	5.4	5.2	9.8	5.4	5.2	9.8	5.4	2SC4081R
Q803	5.2	5.2	4.5	5.2	5.2	4.5	5.2	5.2	4.5	5.2	5.2	4.5	5.2	5.2	4.5	2SA1298Y
Q804	0	0	5.2	0	0	5.2	0	0	5.2	0	0	5.2	0	0	5.2	UN5213
Q805	0	0	4.2	0	0	4.2	0	0	4.2	0	4.2	0.1	0	4.2	0.1	UN5213
Q806	4.0	9.8	0	4.6	9.8	5.0	4.6	9.8	5.0	3.9	9.8	0	3.9	9.8	0	2SC4081R
Q807	5.2	5.2	4.5	5.2	5.2	4.5	5.2	5.2	4.5	5.2	5.2	4.5	5.2	5.2	4.5	2SA1298Y
Q808	0	0	4.4	0	0	4.4	0	0	4.4	0	0	4.4	0	0	4.4	UN5213
Q809	9.8	9.8	9.1	9.8	9.8	9.1	9.8	9.8	9.1	9.8	9.8	9.1	9.8	9.8	9.1	2SA1576R

■ **Voltage of Transistor**
■ **Circuit: System Control**

TR No.	MODE															Remarks
	Stop			REC						PLAY						
				SP			LP			SP			LP			
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	( ) Indicate Terminal No. of pairs TR.
Q810	9.8	9.8	0.5	9.8	9.8	0.5	9.8	9.8	0.5	9.8	9.8	0.5	9.8	9.8	0.5	UN2113
Q811	0.5	2.6	0.4	0.5	2.6	0.4	0.5	2.6	0.4	0.5	2.6	0.4	0.5	2.6	0.4	XN6501(6)(1)(2)
	0.5	0.5	1.1	0.5	0.5	1.1	0.5	0.5	1.1	0.5	0.5	1.1	0.5	0.5	1.1	XN6501(5)(3)(4)
Q813	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	2SA1576R
Q814	0	7.8	0	0	7.6	0	0	7.6	0	0	7.6	0	0	7.6	0	2SC4081R
Q815	0.1	5.2	0.5	0.1	5.2	0.5	0.1	5.2	0.5	0.1	5.2	0.5	0.1	5.2	0.5	2SC4081R
Q817	0	5.2	0.1	0	5.1	0.1	0	5.1	0.2	0	5.2	0.1	0	5.2	0.2	UN5213
Q819	1.4	0	5.2	1.4	0	5.2	1.4	0	5.2	1.4	0	5.2	1.4	0	5.2	2SK94
Q822	5.2	5.1	0.5	5.2	5.1	0.5	5.2	5.1	0.5	5.2	5.1	0.5	5.2	5.1	0.5	UN2113
Q823	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	UN2113
Q824	0	5.2	0	0	5.2	0	0	5.2	0	0	5.2	0	0	5.2	0	UN5213
Q826	0	0	5.2	0	0	5.2	0	0	5.2	0	0	5.2	0	0	5.2	UN5213
Q831	0	0	0.6	0	5.2	0.6	0	5.2	0.6	0	5.2	0.6	0	5.2	0.6	2SC4081R
Q832	0	0	0.6	0	5.2	0.6	0	5.2	0.6	0	5.2	0.6	0	5.2	0.6	2SC4081R

■ **Voltage of Transistor**
■ **Circuit: Audio**

TR No.	MODE															Remarks
	Stop			REC						PLAY						
				SP			LP			SP			LP			
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	( ) Indicate Terminal No. of pairs TR.
Q601	0	5.1	0.1	0	5.1	0.1	0	5.1	0.1	0	5.1	0.1	0	5.1	0.1	2SC4081R
Q691	0	9.1	0.1	0	9.1	0.1	0	9.1	0.1	0	9.1	0.1	0	9.1	0.1	UN5213
Q693	9.1	0.3	9.1	9.0	8.9	8.3	9.0	9.0	8.3	9.1	0.3	9.1	9.1	0.3	9.1	2SA1298Y
Q694	9.1	0.3	9.1	9.0	9.0	8.3	9.0	9.0	8.3	9.1	0.3	9.1	9.1	0.3	9.1	2SA1298Y
Q695	0	0.3	0.3	0.1	8.8	0.6	0.1	8.8	0.6	0	0.3	0.3	0	0.3	0.3	2SD1664R
Q696	0	0.3	0.3	0	0.3	0.3	0	0.3	0.3	0	0.3	0.3	0	0.3	0.3	2SD1664R

■ **Voltage of Transistor**
■ **Circuit: Servo**

TR No.	MODE															Remarks
	Stop			REC						PLAY						
				SP			LP			SP			LP			
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	( ) Indicate Terminal No. of pairs TR.
Q702	0	5.2	0	0	5.2	0	0	0	5.1	0	5.2	0	0	0	5.1	UN2113
Q703	5.2	0	5.2	5.2	5.2	0.1	5.2	0	5.1	5.2	5.2	0.1	5.2	0	5.1	UN2113
Q704	5.2	5.1	0	5.2	2.0	5.2	5.2	2.0	5.2	5.2	2.0	5.2	5.2	2.0	5.2	FMA2(4)(1)(5)
	5.2	5.2	0	5.2	2.0	5.2	5.2	2.0	5.2	5.2	2.0	5.2	5.2	2.0	5.2	FMA(4)(2)(3)
Q705	9.8	0	9.8	9.7	2.0	9.5	9.7	2.0	9.5	9.7	2.0	9.5	9.7	2.0	9.5	2SB956R
Q706	9.8	0.5	9.8	9.7	4.0	9.4	9.7	4.0	9.4	4.0	9.4	9.4	9.7	4.0	9.4	2SB956R
Q7801	8.4	9.8	9.1	8.4	9.7	9.0	8.4	9.7	9.0	8.4	9.8	9.1	8.4	9.8	9.1	2SC4081R

■ **Voltage of Transistor**
■ **Circuit: Power**

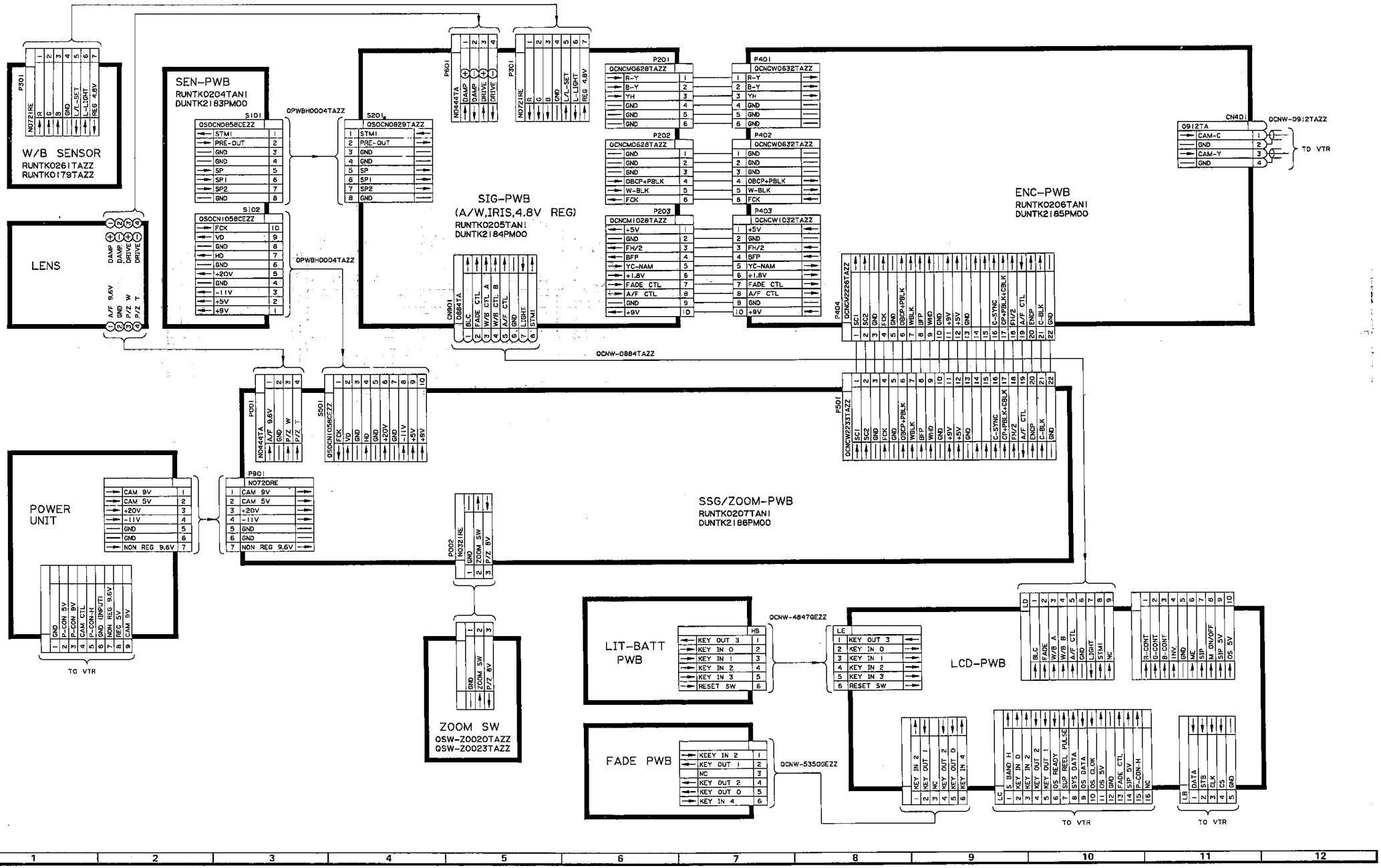
TR No.	MODE															Remarks
	Stop			REC						PLAY						
				SP			LP			SP			LP			
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	( ) Indicate Terminal No. of pairs TR.
Q926	5.2	08	5.2	5.2	5.1	4.5	5.2	5.1	4.5	5.2	0.9	5.2	5.2	0.9	5.2	2SB710RS
Q927	5.2	0	5.2	5.2	0	5.2	5.2	0	5.2	5.2	5.1	4.4	5.2	5.1	4.4	2SB710RS
Q929	0	5.2	0.1	0	0.1	4.2	0	0.1	4.2	0	5.2	0.1	0	5.2	0.1	FMG2(4)(1)(5)
	0	5.2	0.1	0	5.2	0	0	5.2	0	0	0.1	4.1	0	0.1	4.1	FMG2(4)(2)(3)

CHANGE IN CAMERA PWB ASSEMBLY CODING

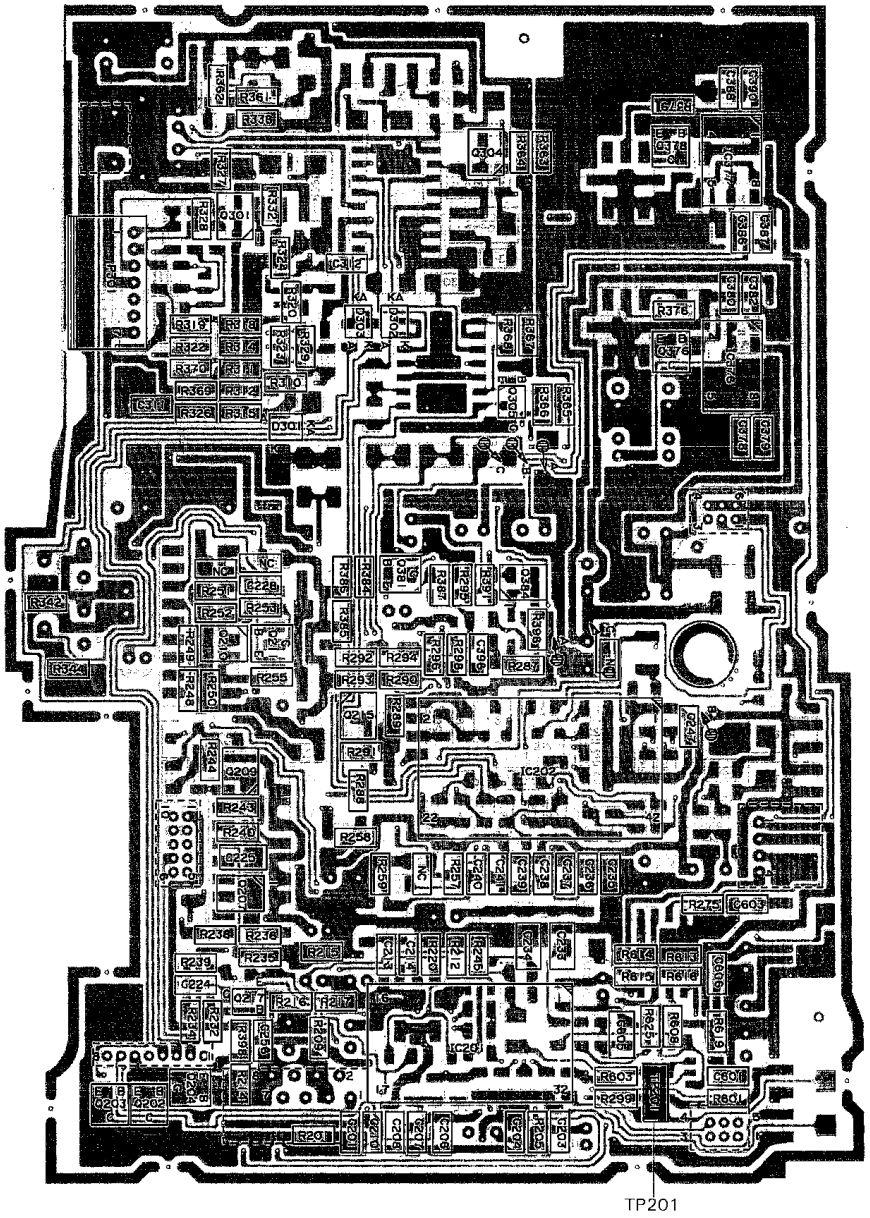
The camera PWB assemblies are coded in two ways; RUNTK. . . .TAN1 and DUNTK. . . .PM00. This difference in coding is just related to their production locations, not to any circuit design modification. These differently coded assemblies are, therefore, the same in circuitry and components, and interchangeable.

PWB assembly name	DUNTK. . . .PM00	RUNTK. . . .TAN1
SENSOR circuit	DUNTK2183PM00	RUNTK0204TAN1
SIGNAL PROCESS, AUTO WHITE	DUNTK2184PM00	RUNTK0205TAN1
ENCODER circuit	DUNTK2185PM00	RUNTK0206TAN1
SSG, ZOOM circuit	DUNTK2186PM00	RUNTK0207TAN1

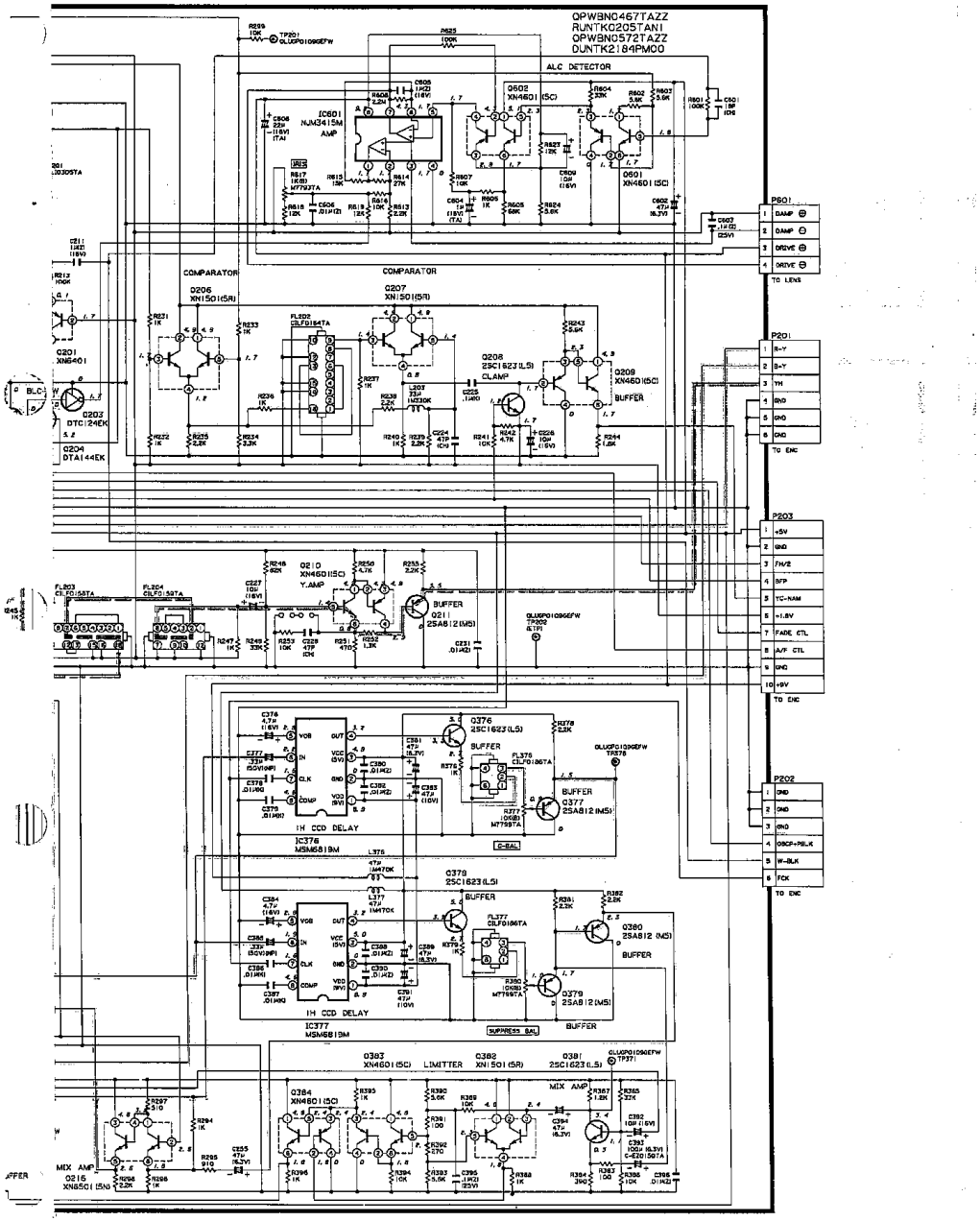
OVERALL SCHEMATIC DIAGRAM (Camera Section)



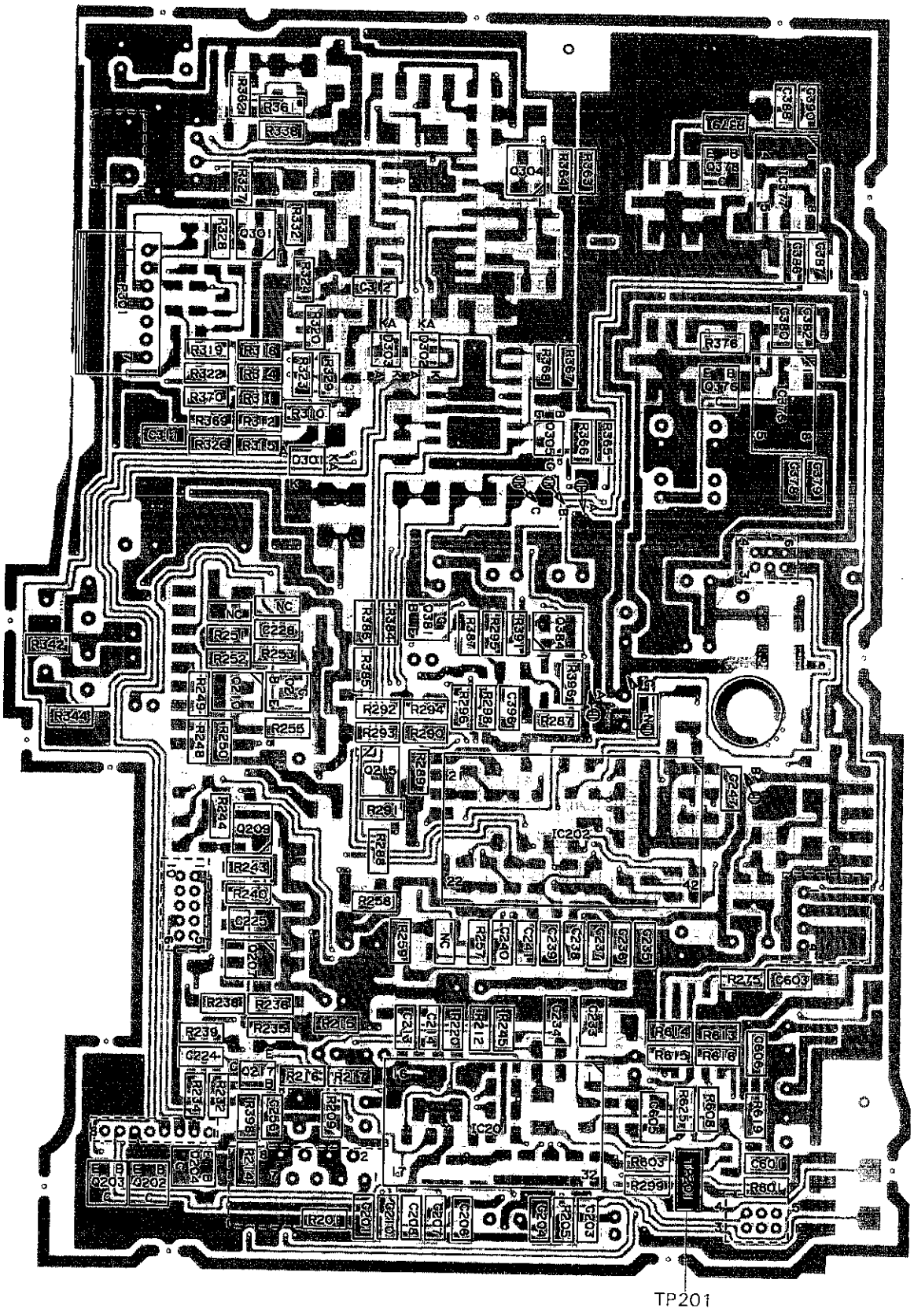
(Wiring Side)



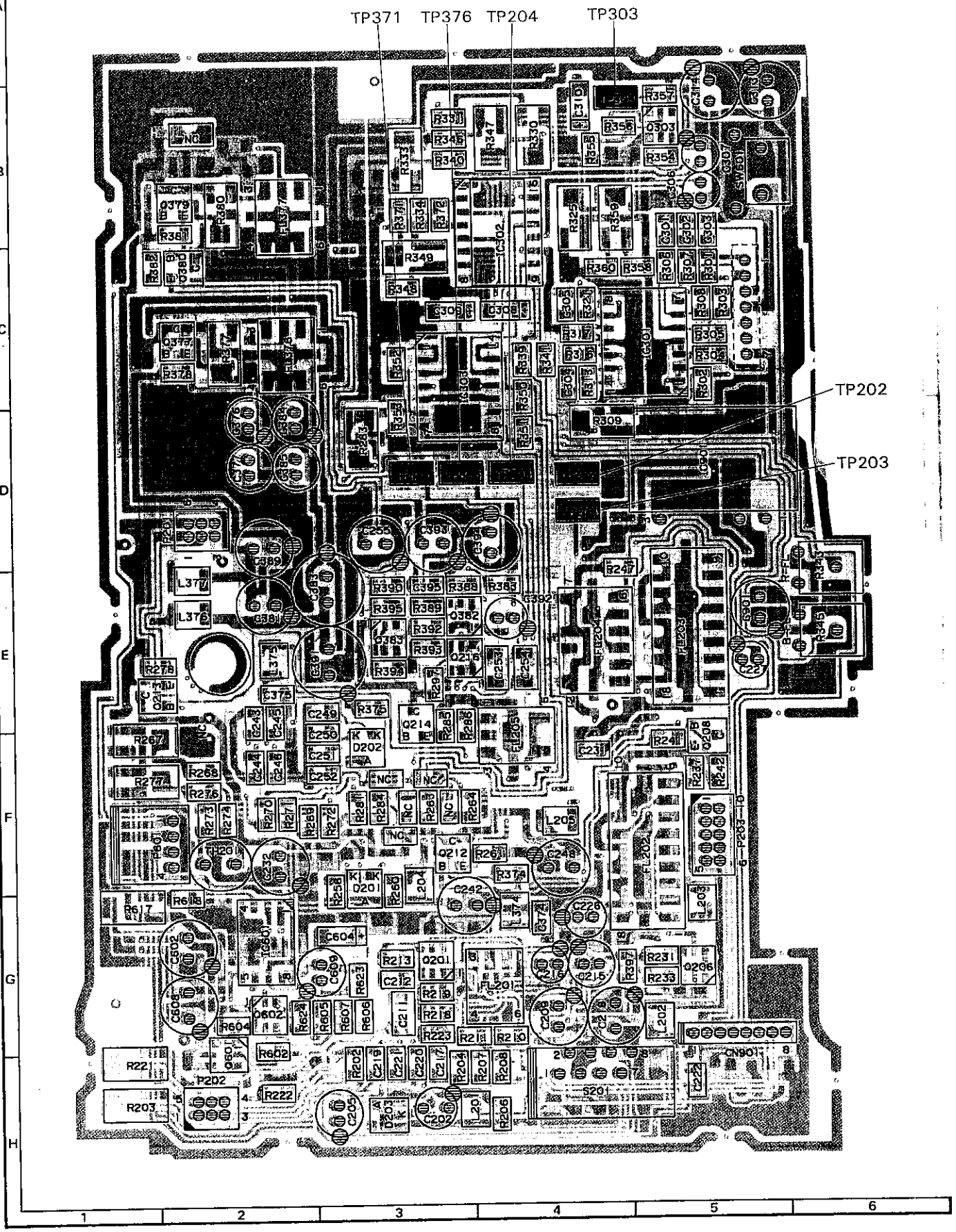
Y/C Signal Y Signal C Signal



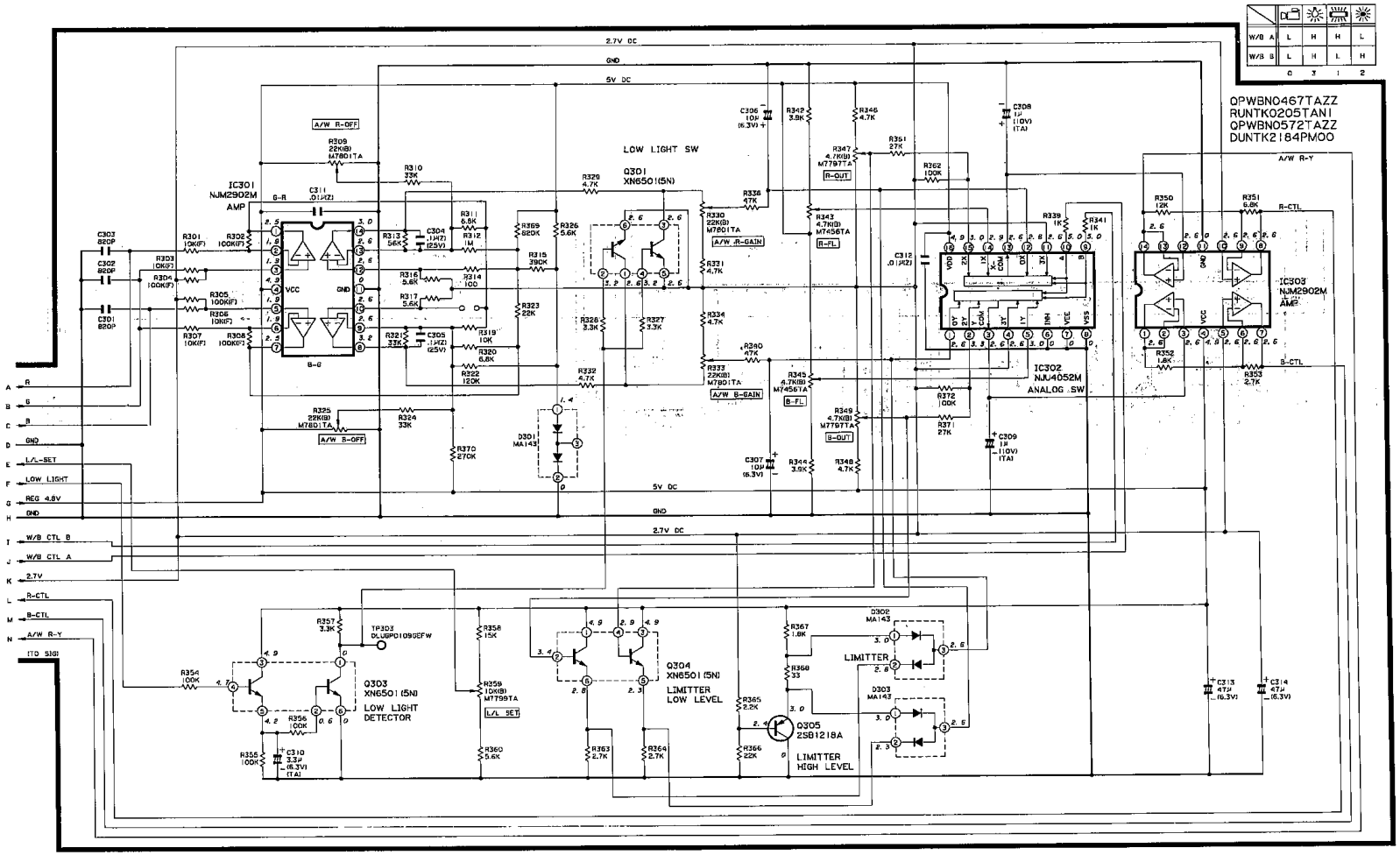
(Wiring Side)



SIGNAL PROCESS, AUTO WHITE, P.W.B.
(Component Side)



AUTO WHITE CIRCUIT SCHEMATIC DIAGRAM

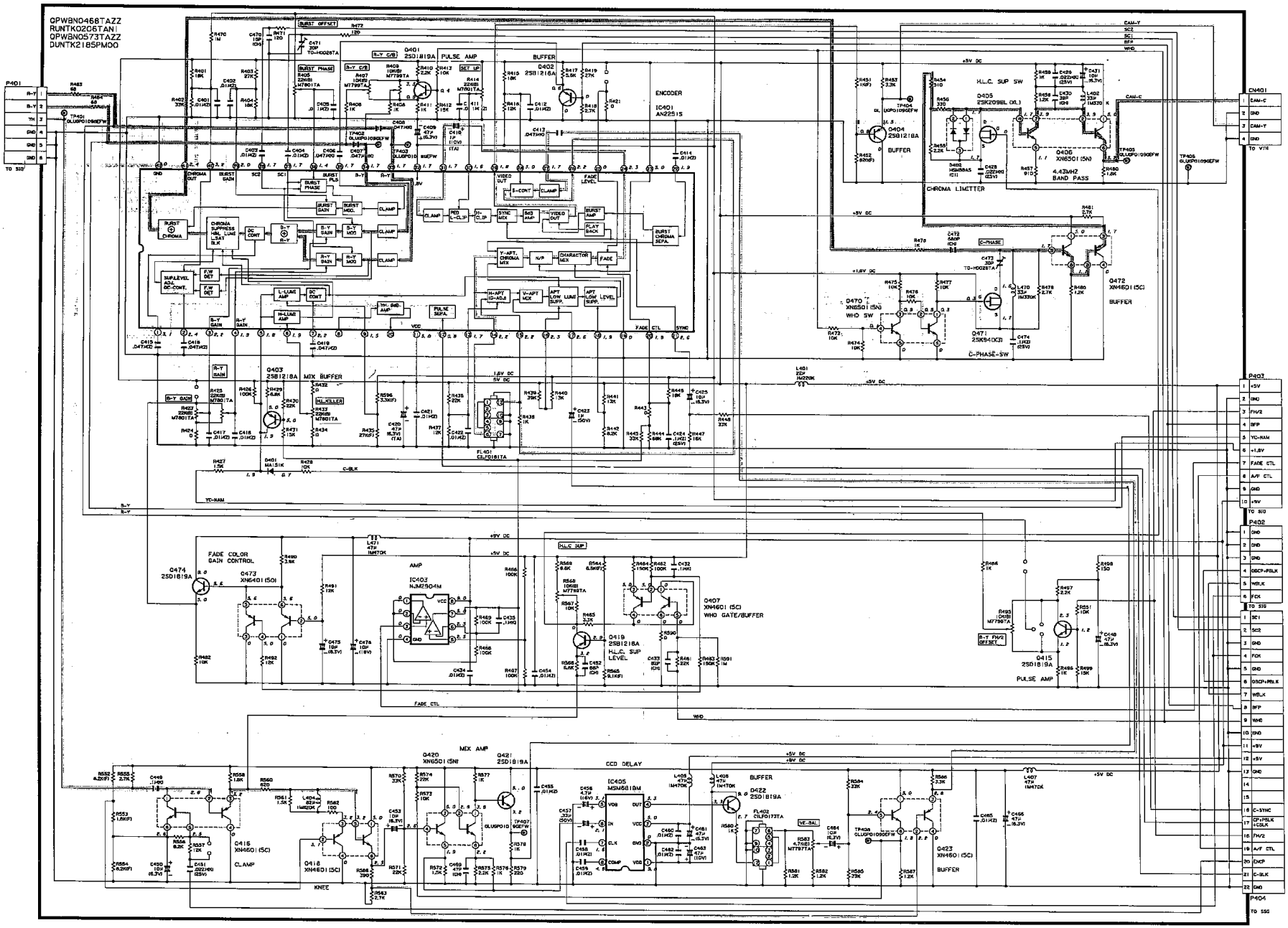


W/B A	L	H	H	L
W/B B	L	H	L	H

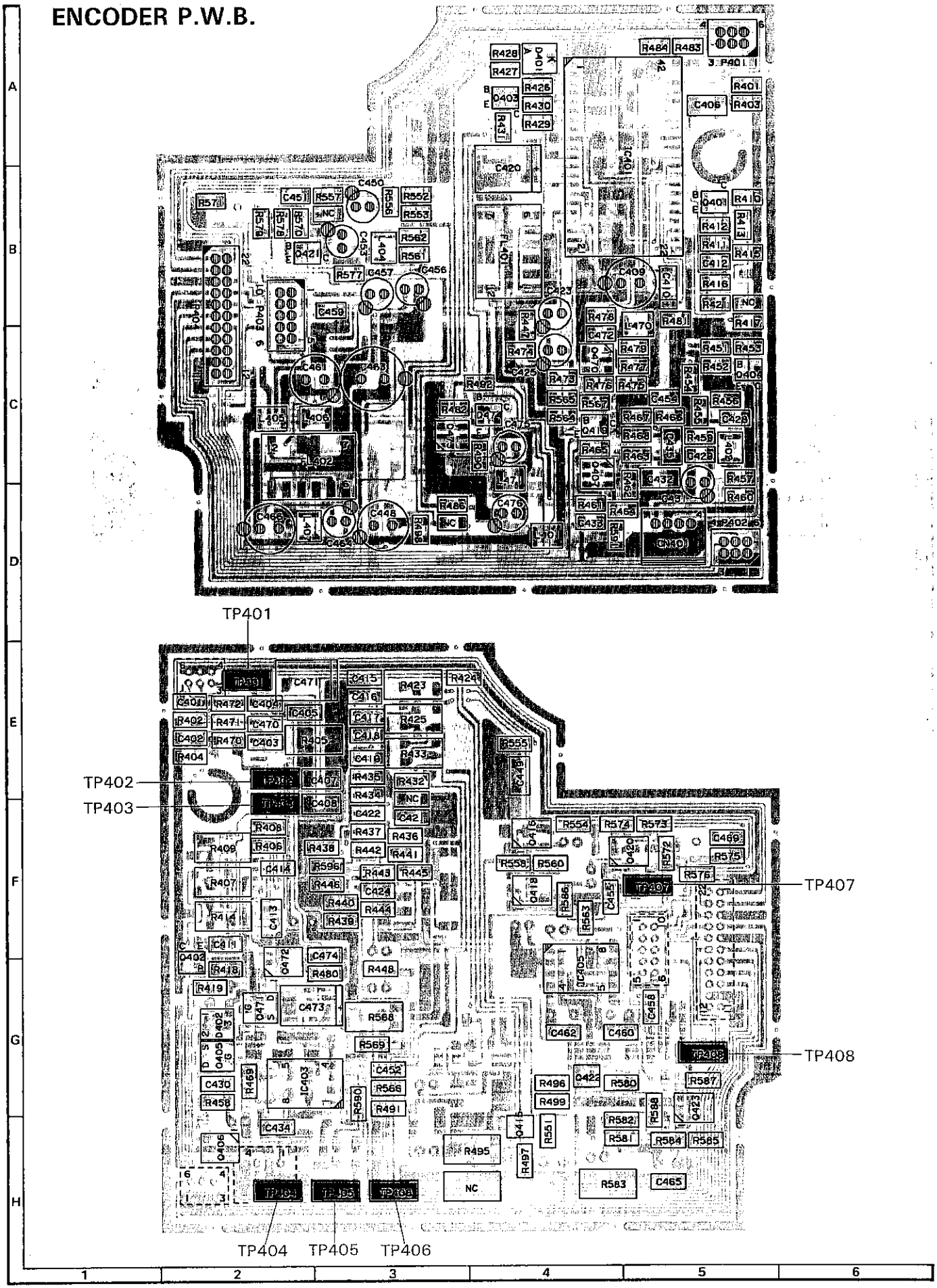
ENCODER CIRCUIT SCHEMATIC DIAGRAM

C Signal

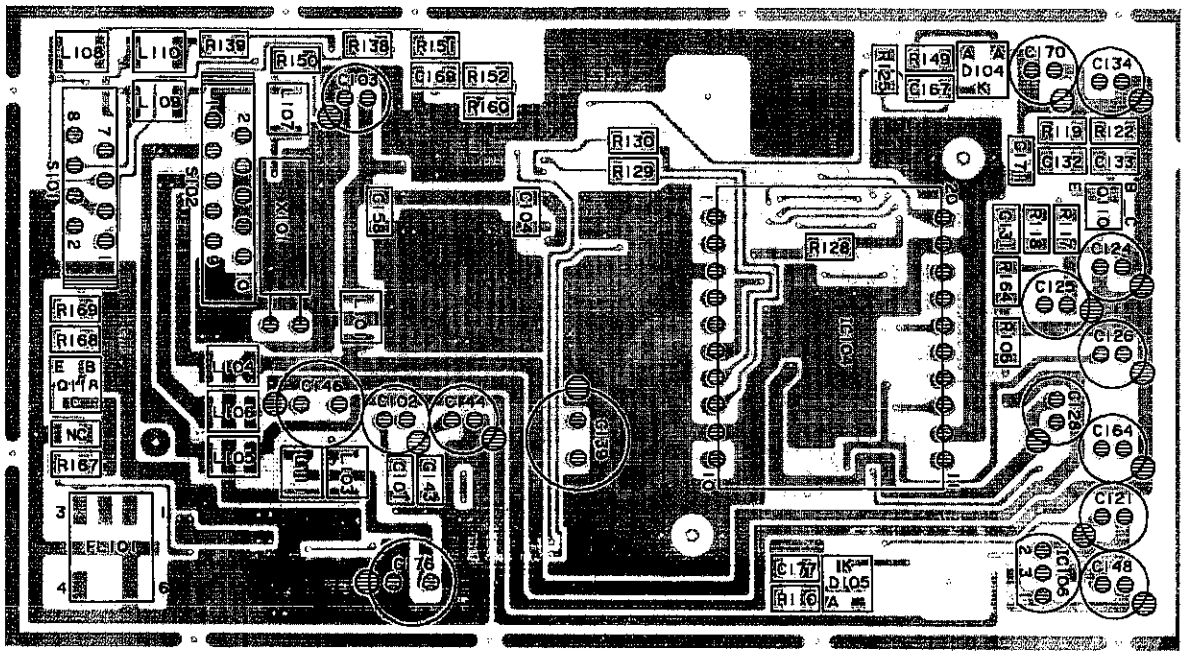
Y Signal

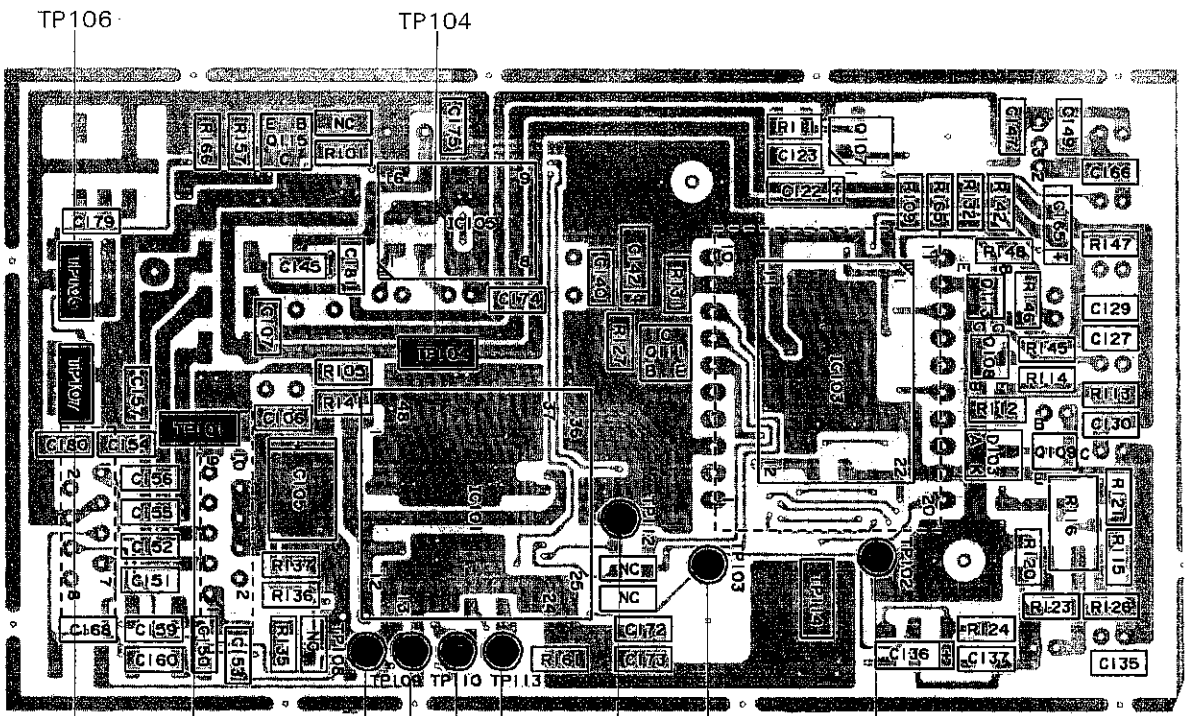


ENCODER P.W.B.


TP401
TP402
TP403
TP404
TP405
TP406
TP407
TP408
A
B
C
D
E
F
G
H
1
2
3
4
5
6

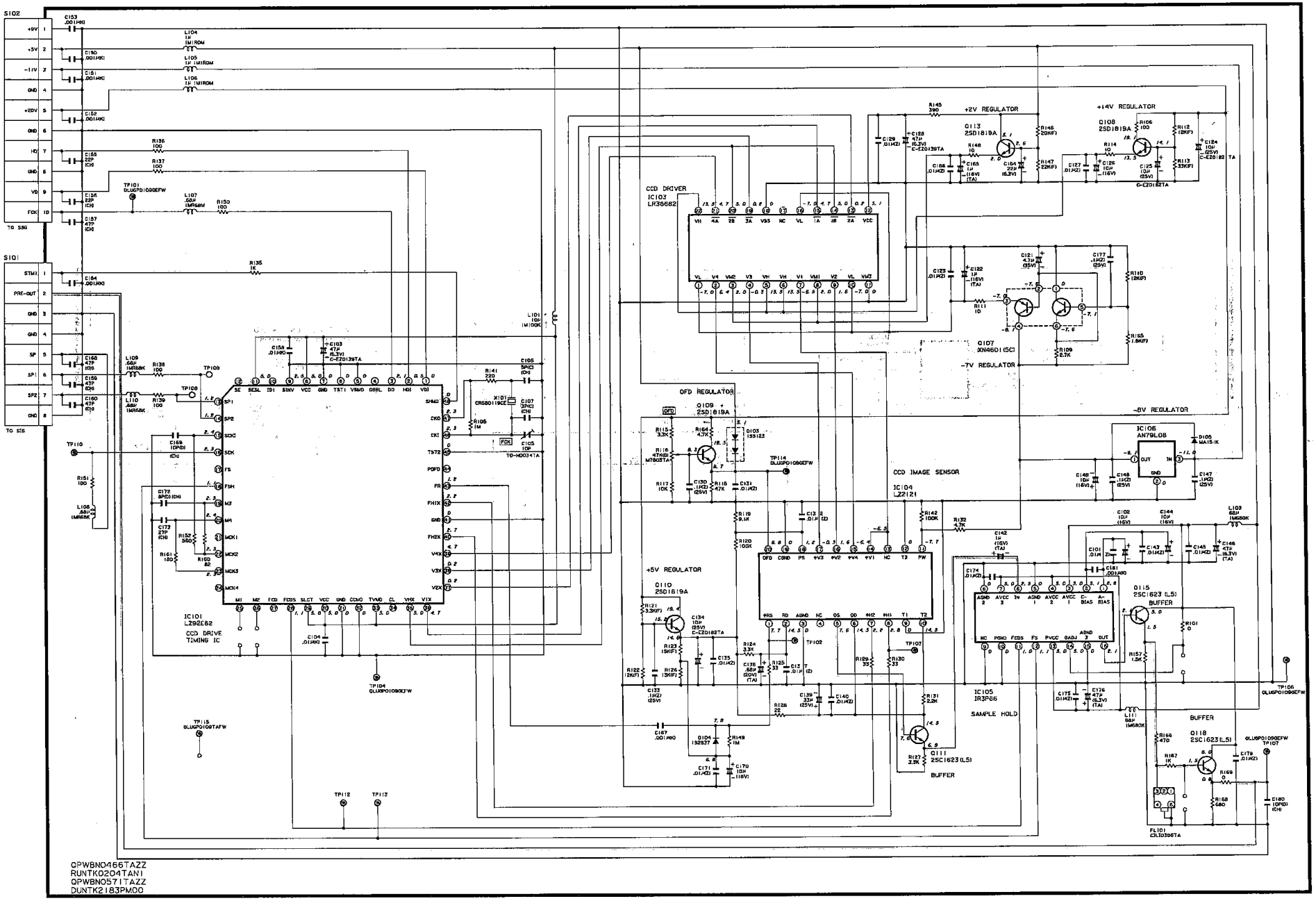
SENSOR P.W.B.



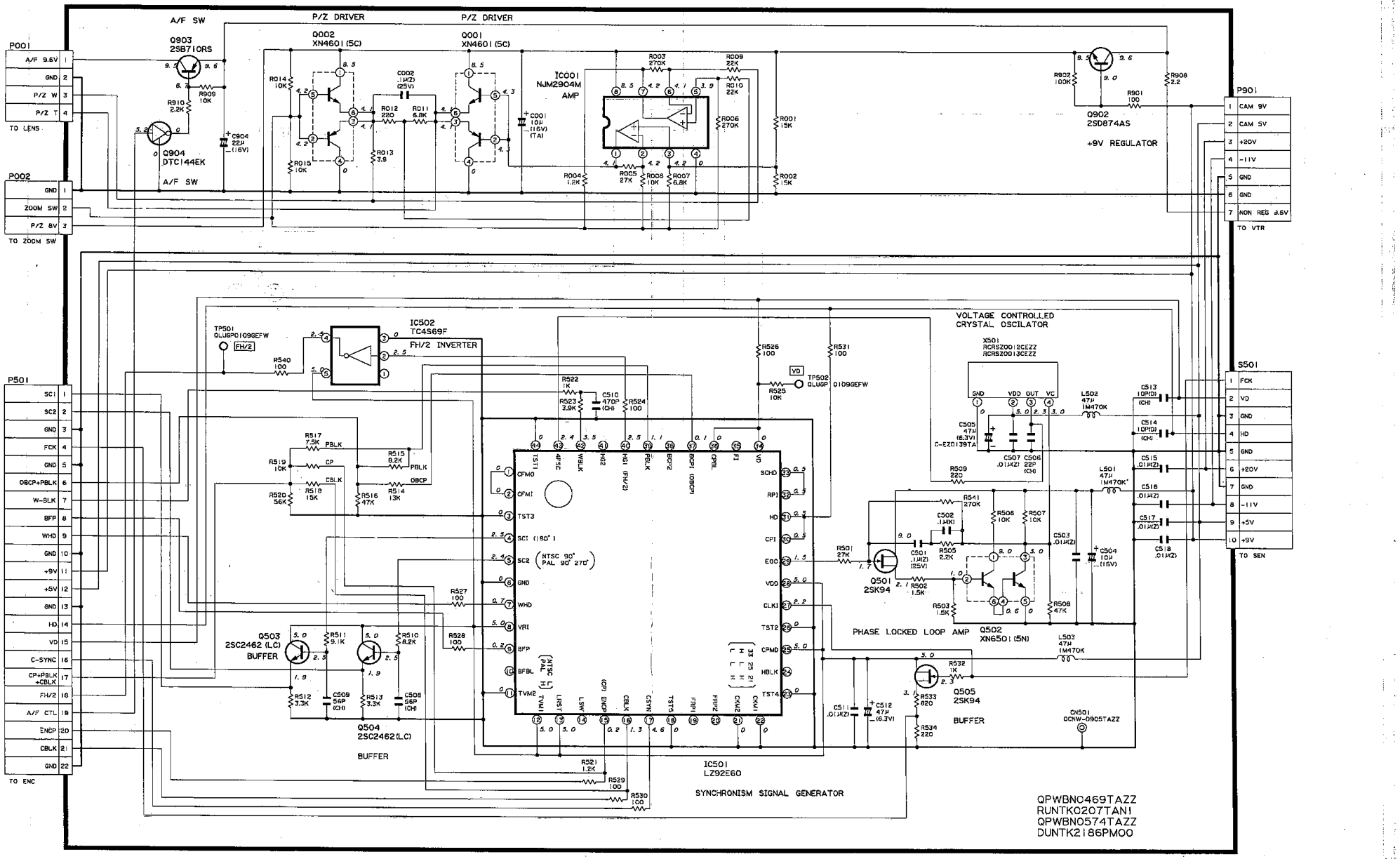

TP106
TP104
TP107
TP101
TP108
TP109
TP110
TP113
TP112
TP103
TP102

SENSOR CIRCUIT SCHEMATIC DIAGRAM

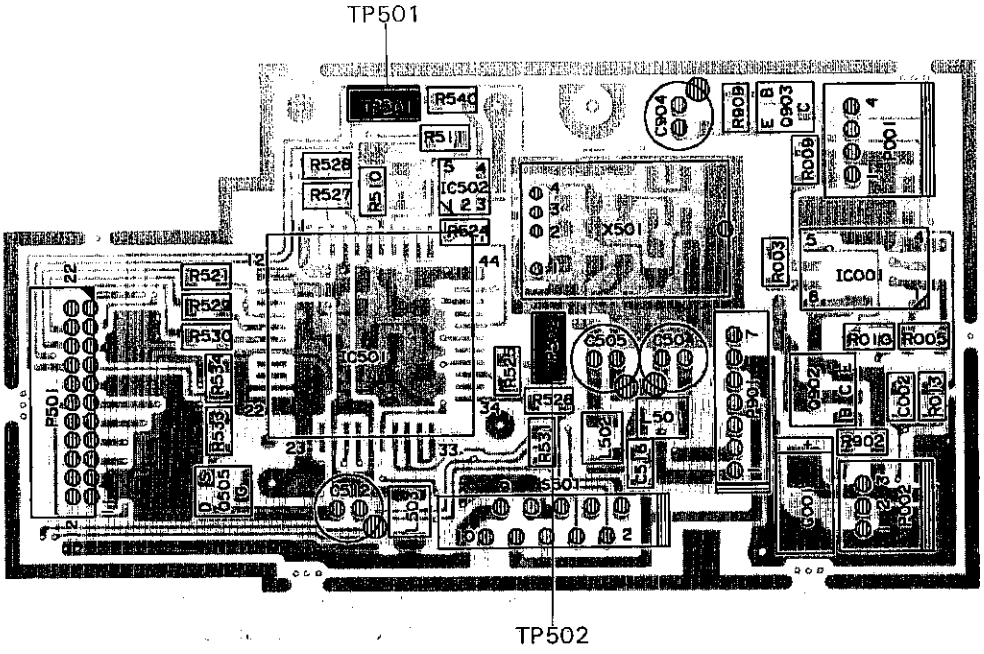
Y/C Signal

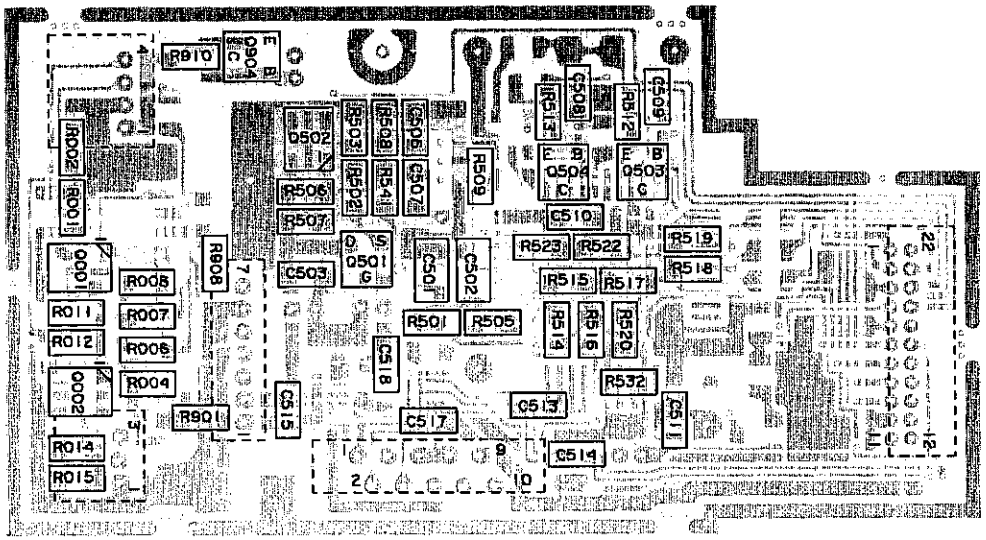


SSG, ZOOM CIRCUIT SCHEMATIC DIAGRAM



SSG, ZOOM P.W.B.



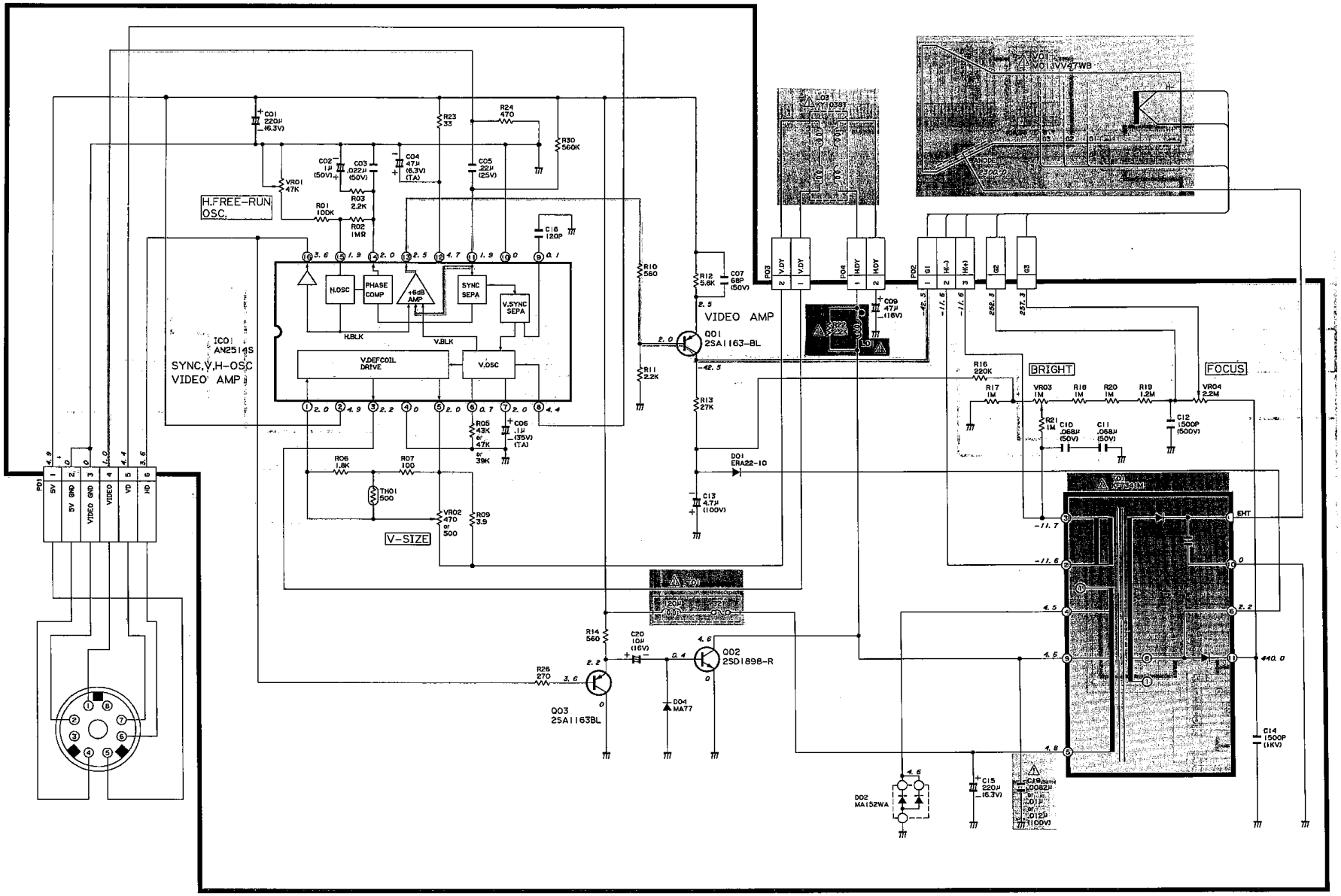


VIEWFINDER P.W.B.

The viewfinder PWB block diagram is referred to in the separately issued Supplement Service Manual.

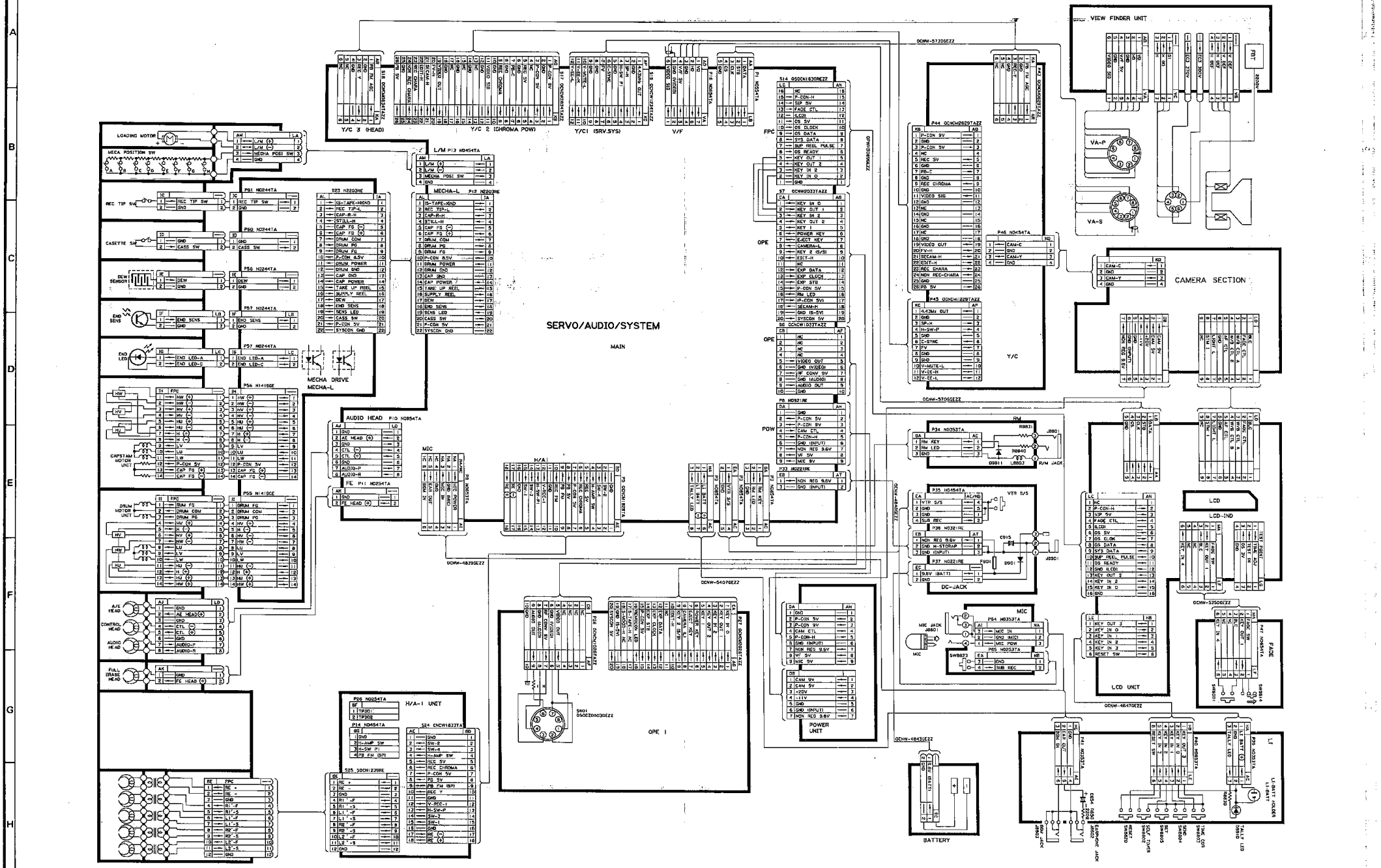
Y Signal

VIEWFINDER CIRCUIT SCHEMATIC DIAGRAM



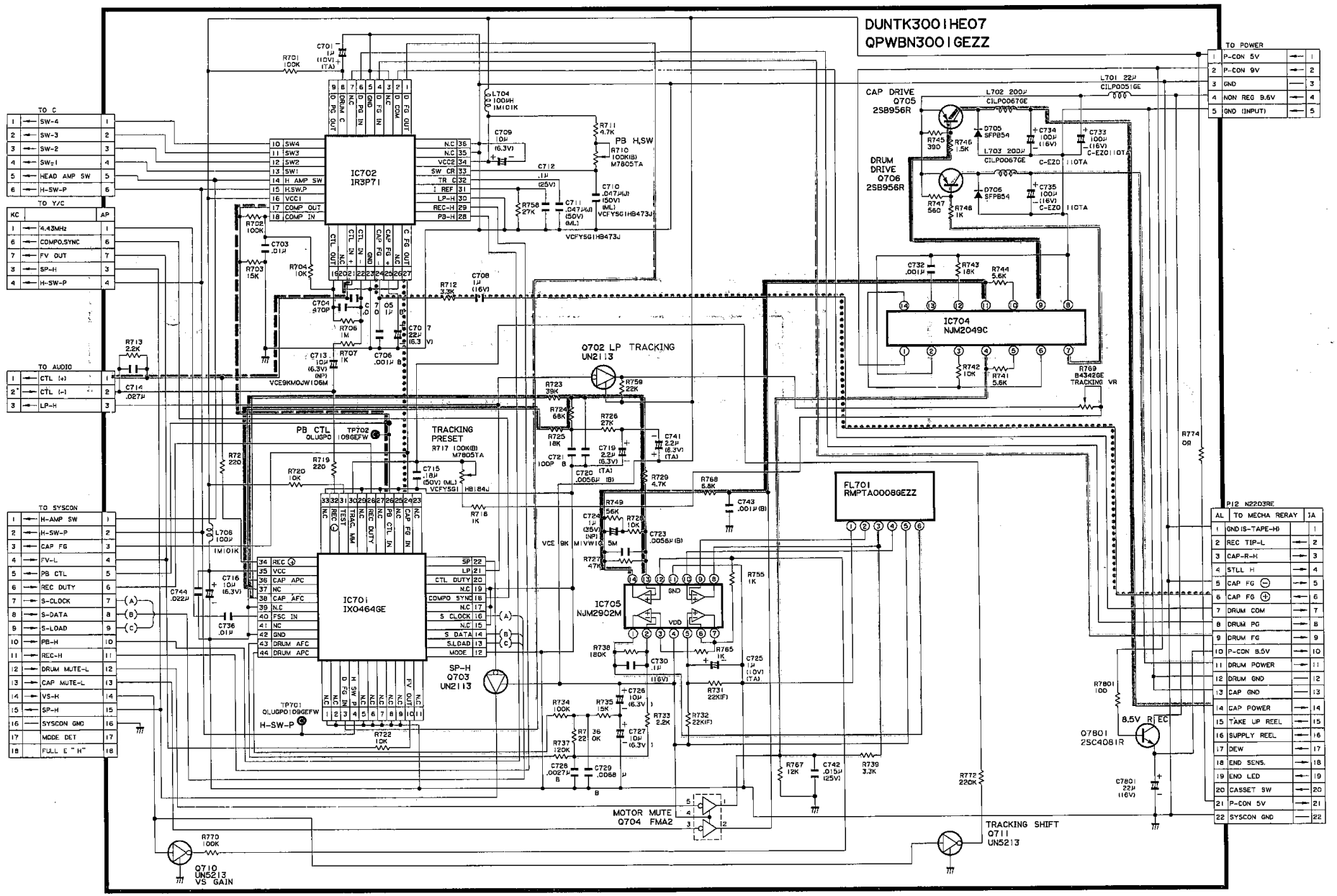
⚠ AND SHADED COMPONENTS = SAFETY RELATED PARTS

OVERALL SCHEMATIC DIAGRAM (VCR Section)



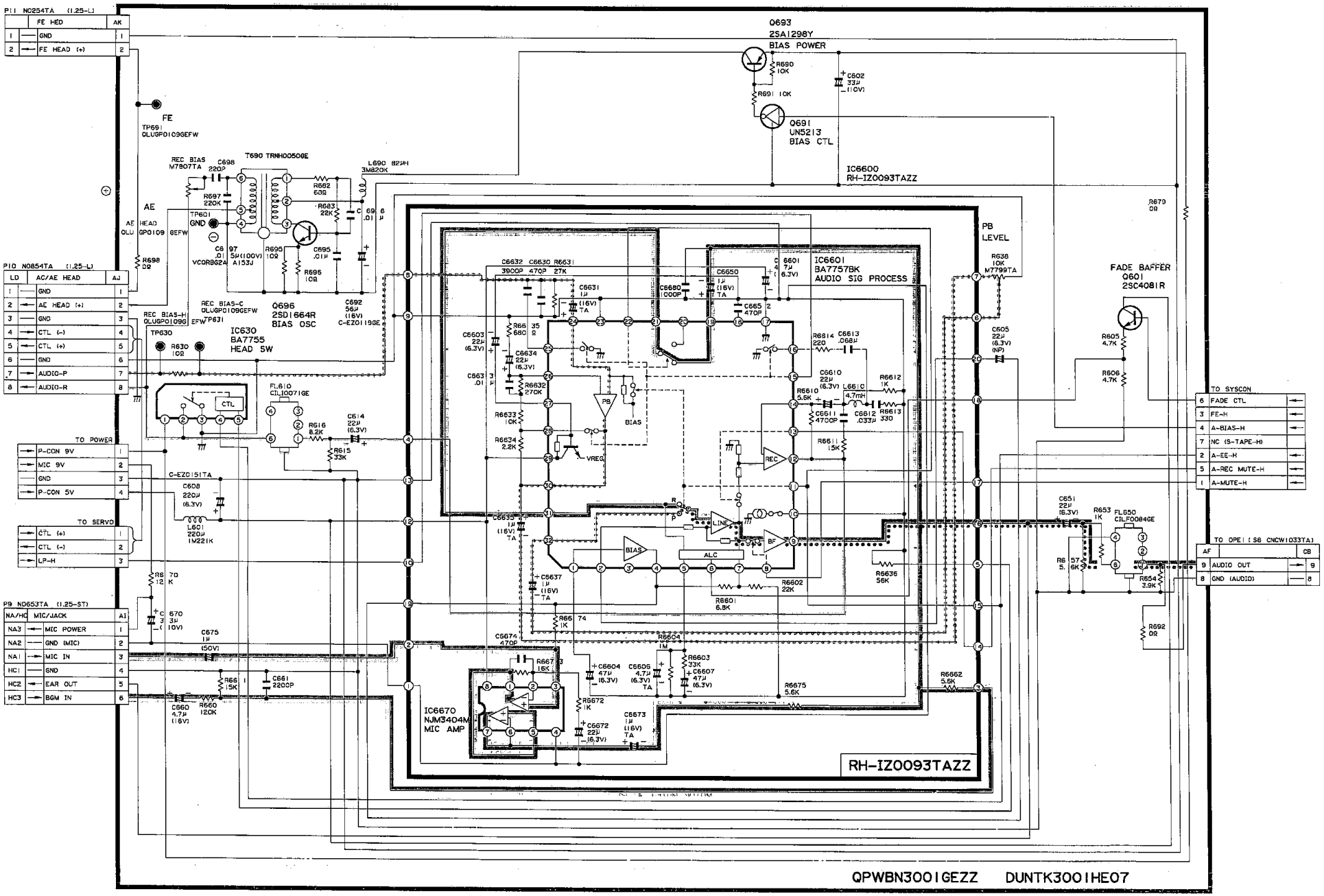
SERVO CIRCUIT SCHEMATIC DIAGRAM

Capstan Error Voltage Signal
PB. Control Signal
Capstan FG. Signal
Drum Error Voltage Signal
Drum FG. Signal

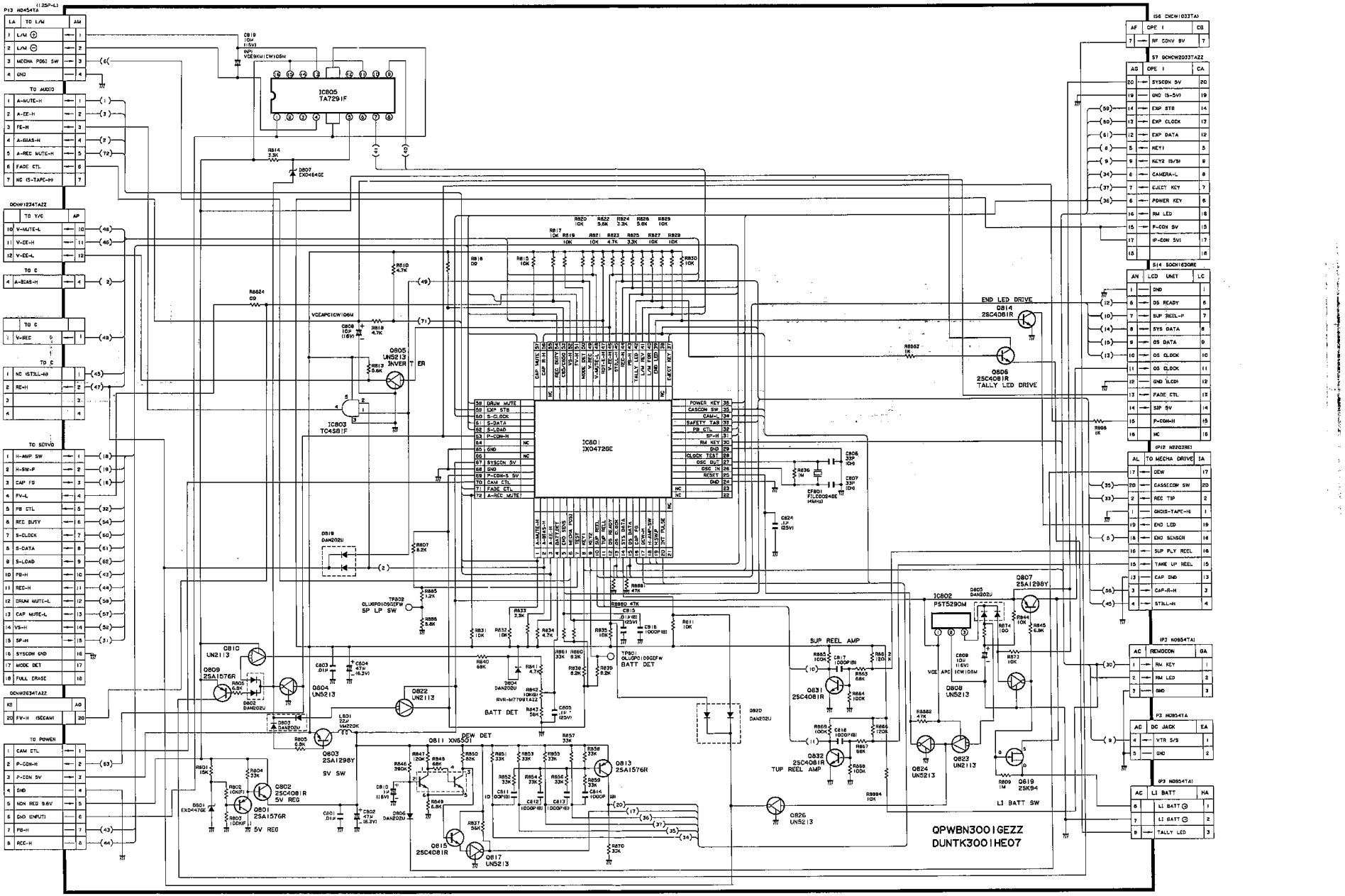


AUDIO CIRCUIT SCHEMATIC DIAGRAM

EE. Audio Signal REC. Audio Signal PB Audio Signal

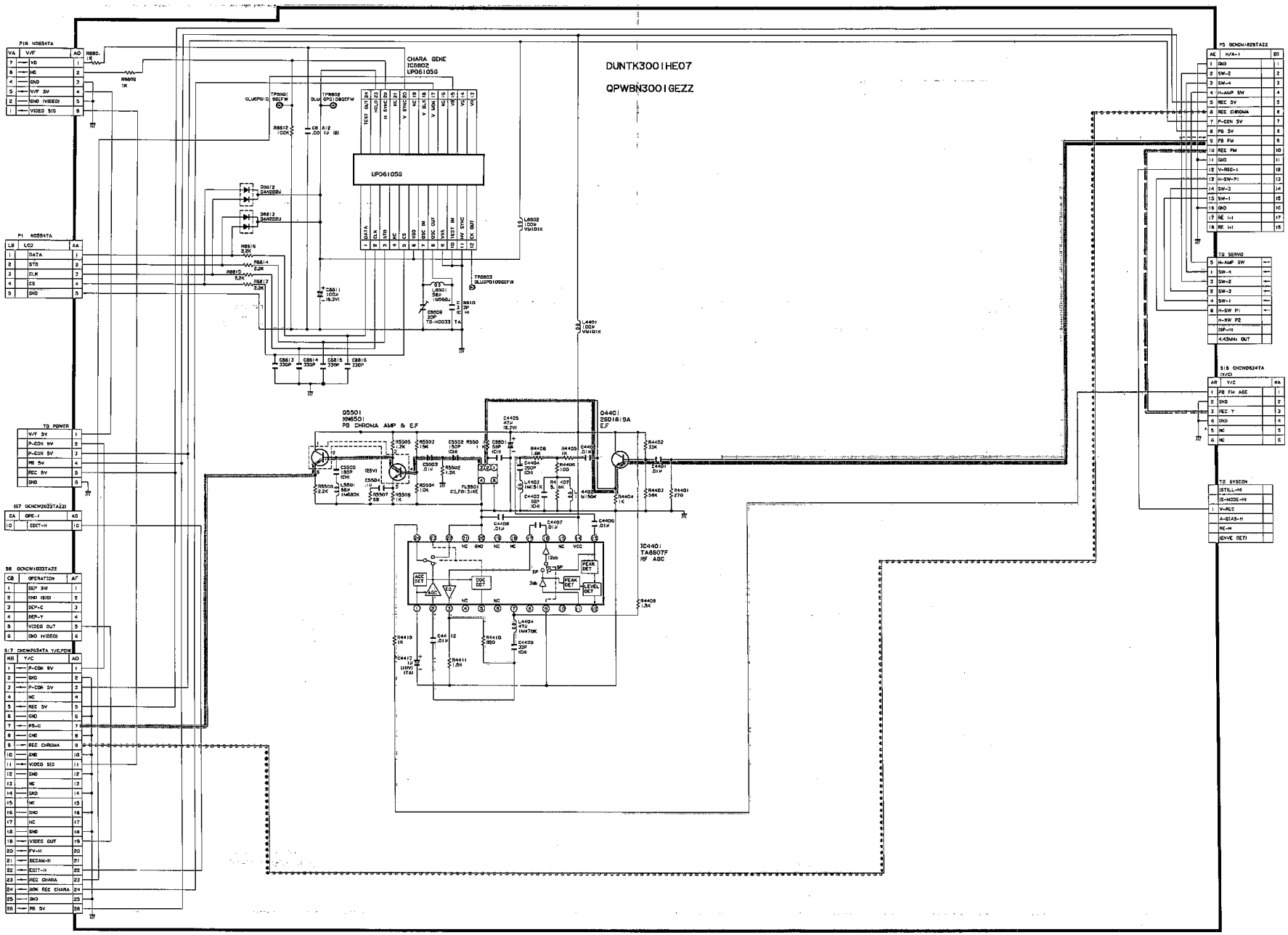


SYSTEM CONTROL CIRCUIT SCHEMATIC DIAGRAM

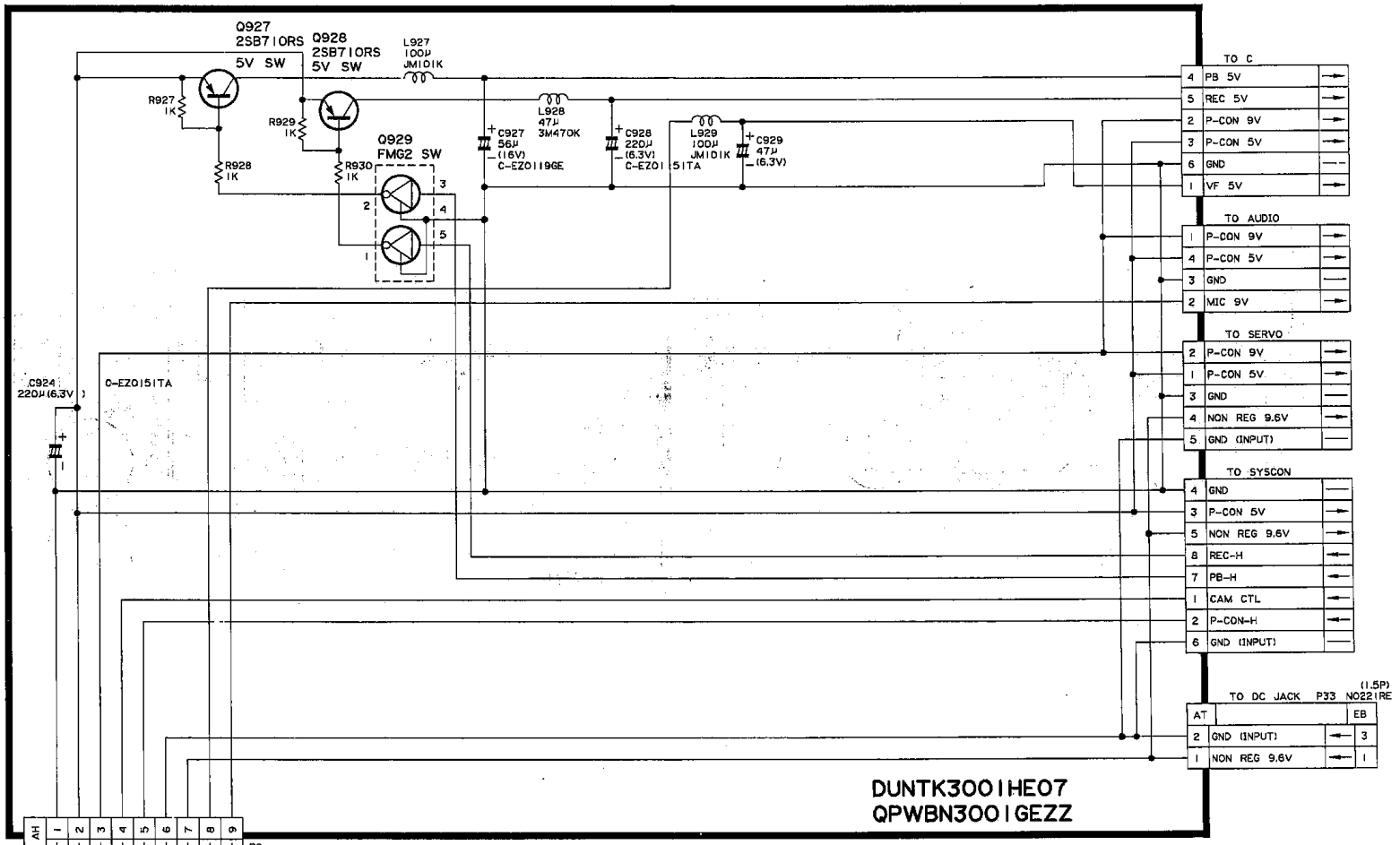


CHROMA CIRCUIT SCHEMATIC DIAGRAM

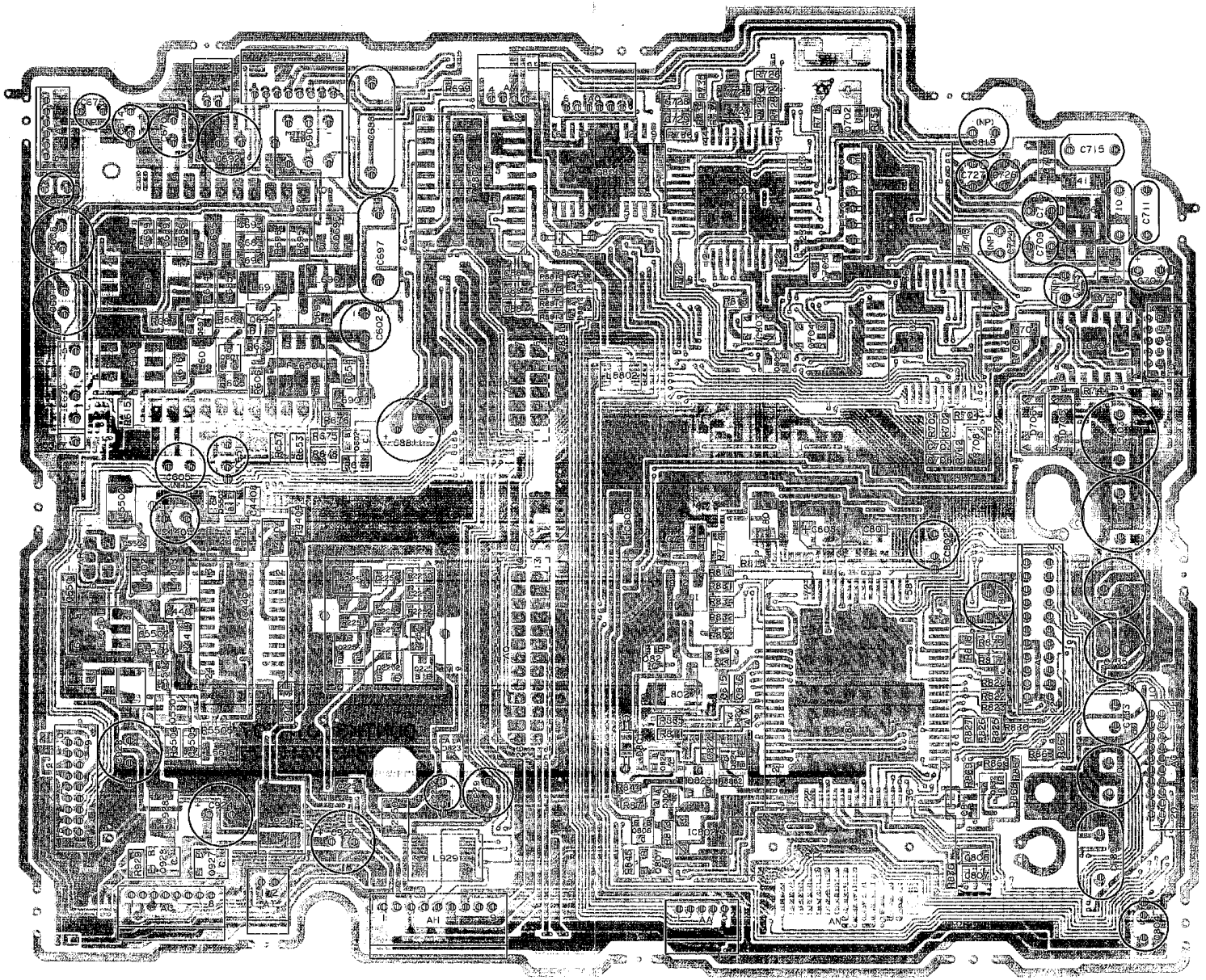
PB C Signal — REC Y Signal — REC C Signal — PB Y Signal



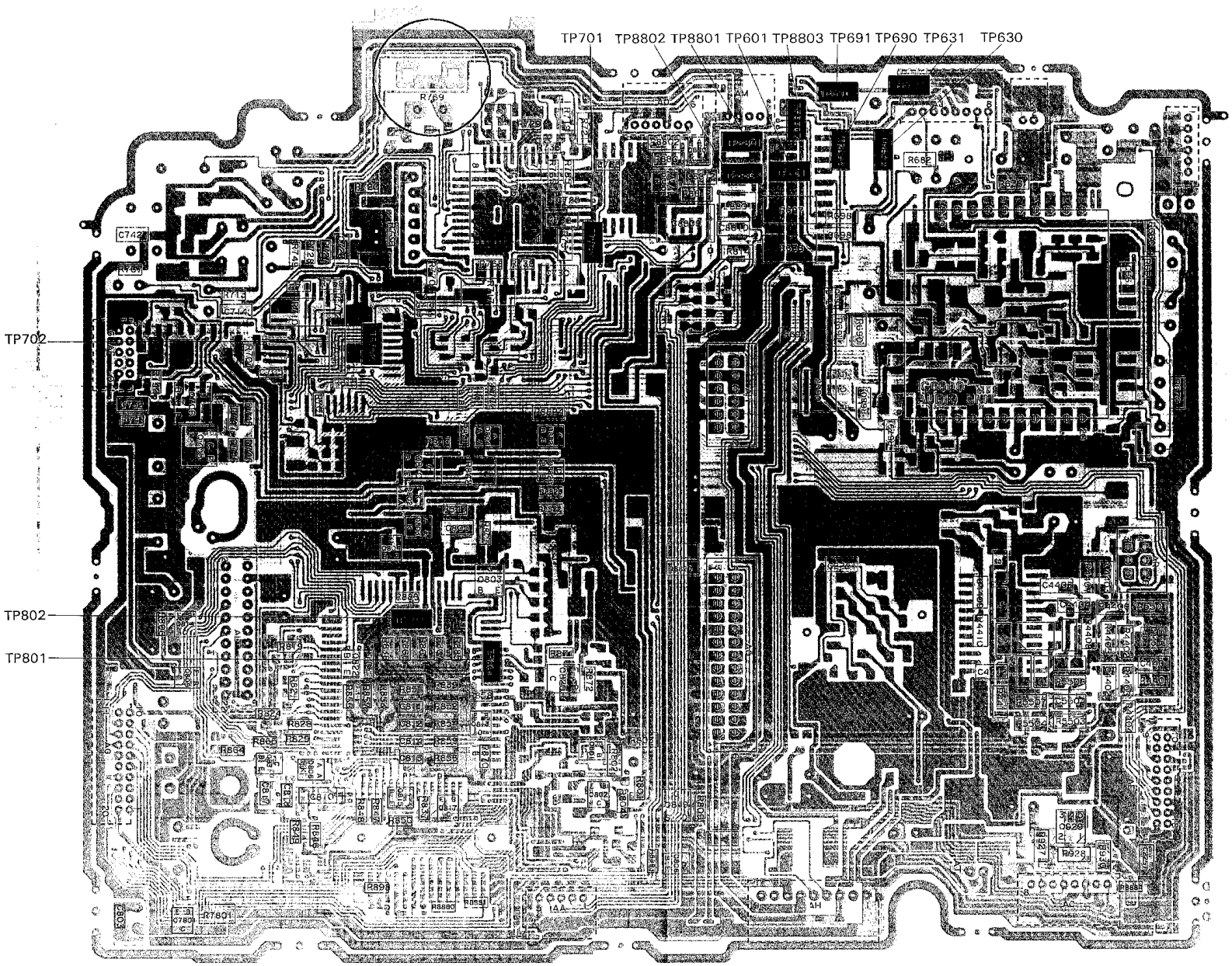
POWER CIRCUIT SCHEMATIC DIAGRAM



MAIN P.W.B.
(Component Side)

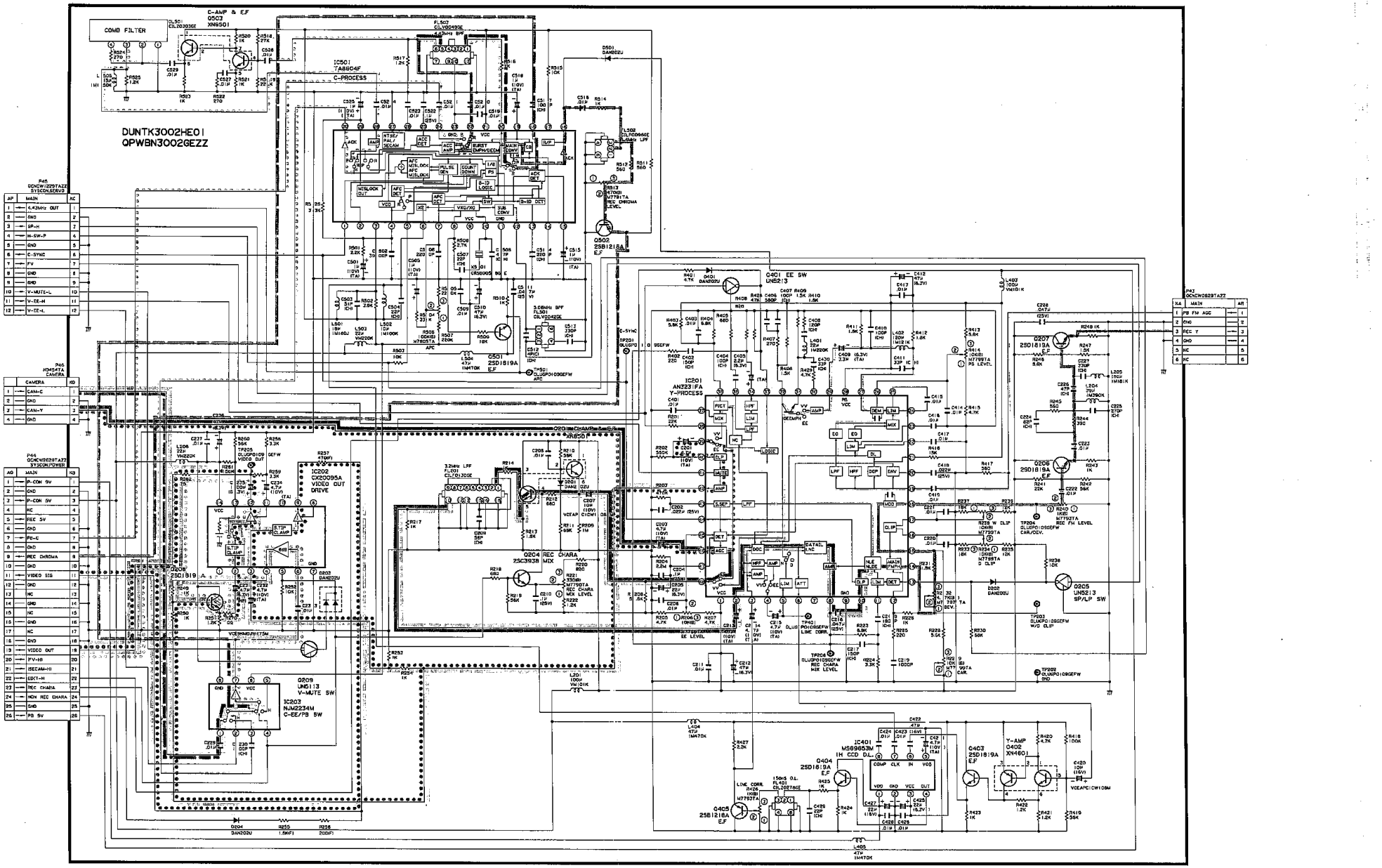


(Wiring Side)

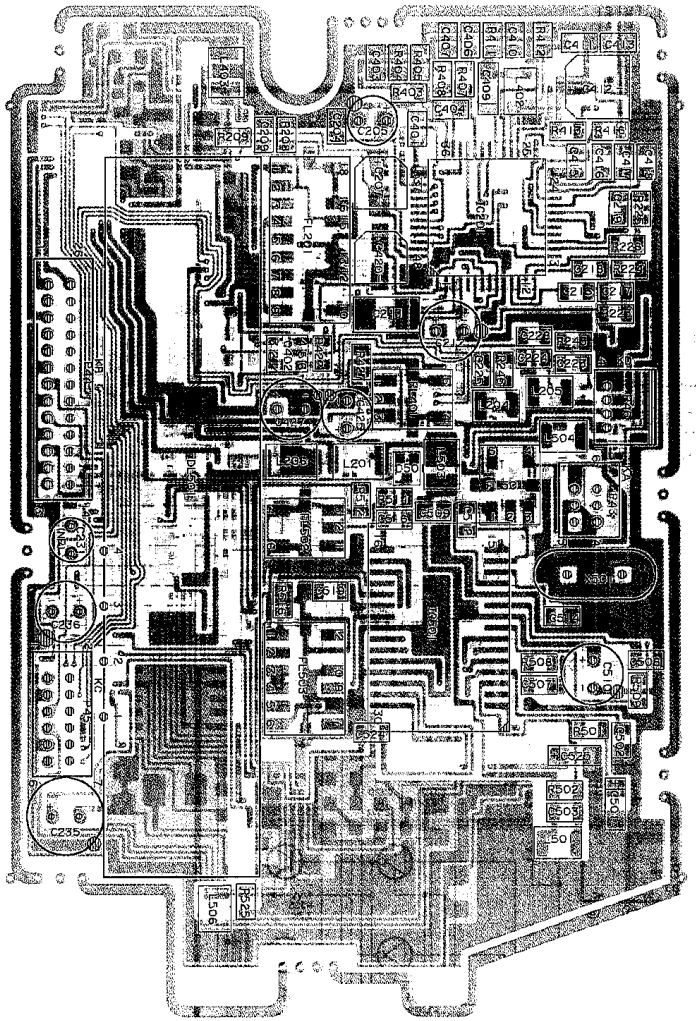

TP701
TP8802
TP8801
TP601
TP8803
TP691
TP690
TP631
TP630
TP702
TP802
TP801
R769
R682
C742
R7801

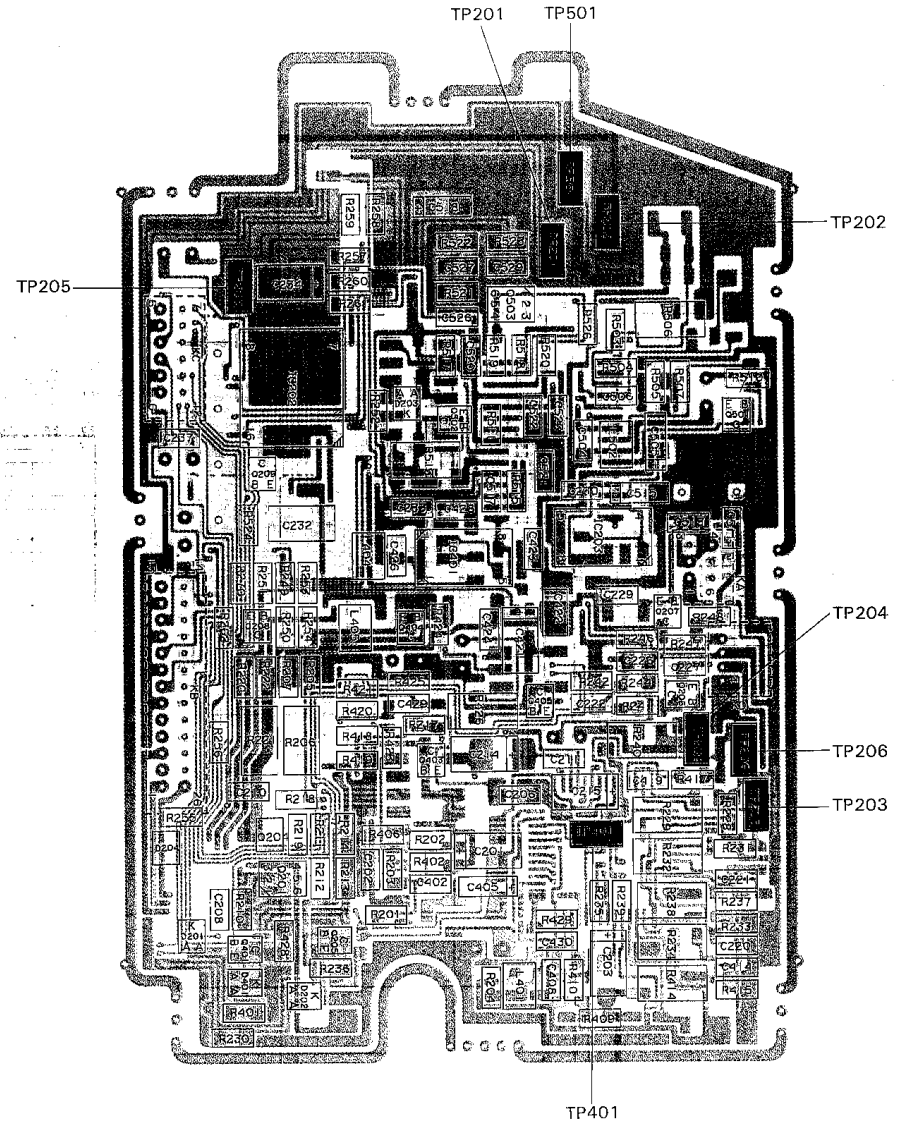
Y/C CIRCUIT SCHEMATIC DIAGRAM

REC Y Signal | REC C Signal | EE Y Signal
EE C Signal | PB Y Signal | PB C Signal



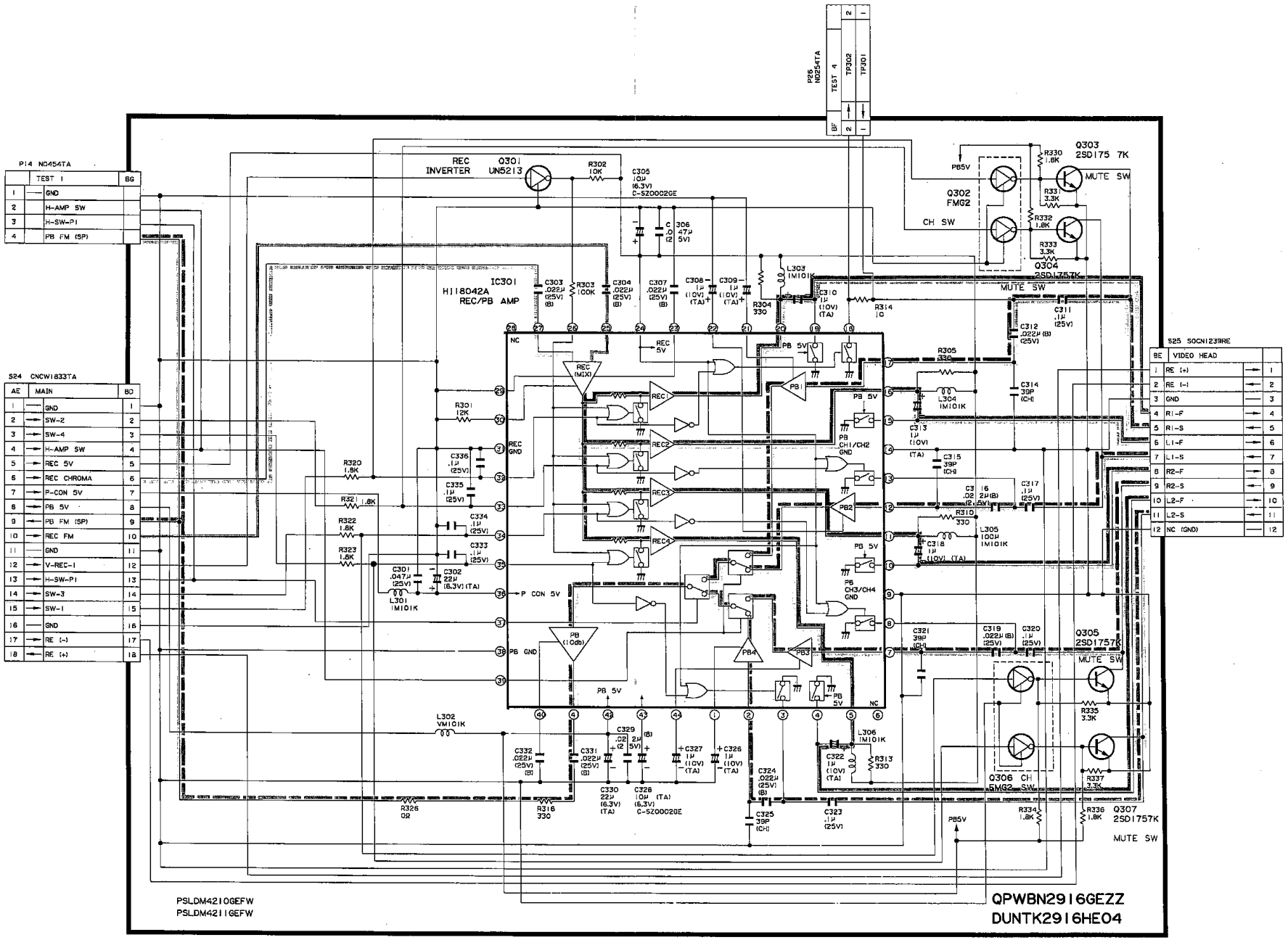
Y/C P.W.B.



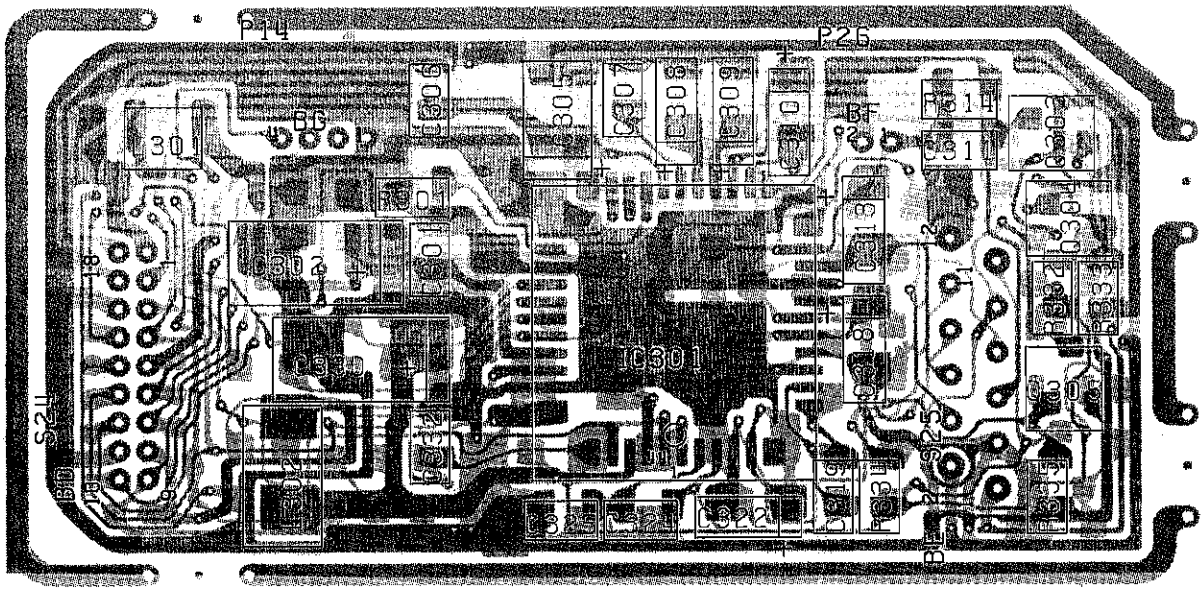


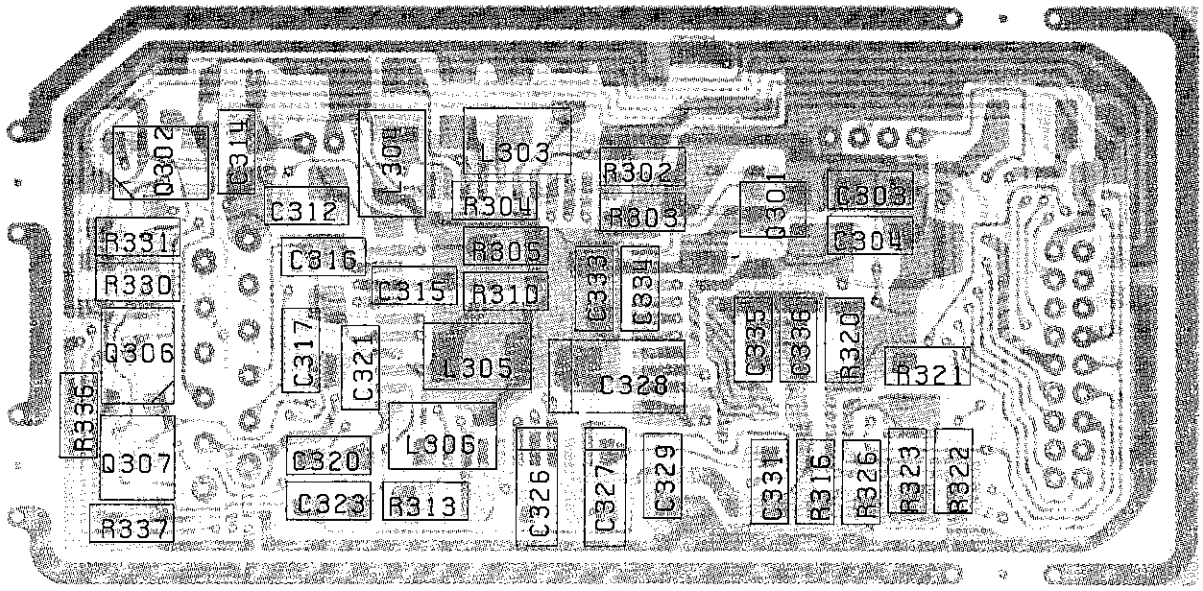
HEAD AMP. CIRCUIT SCHEMATIC DIAGRAM

REC Y Signal — PB Y Signal — PB C Signal — REC C Signal

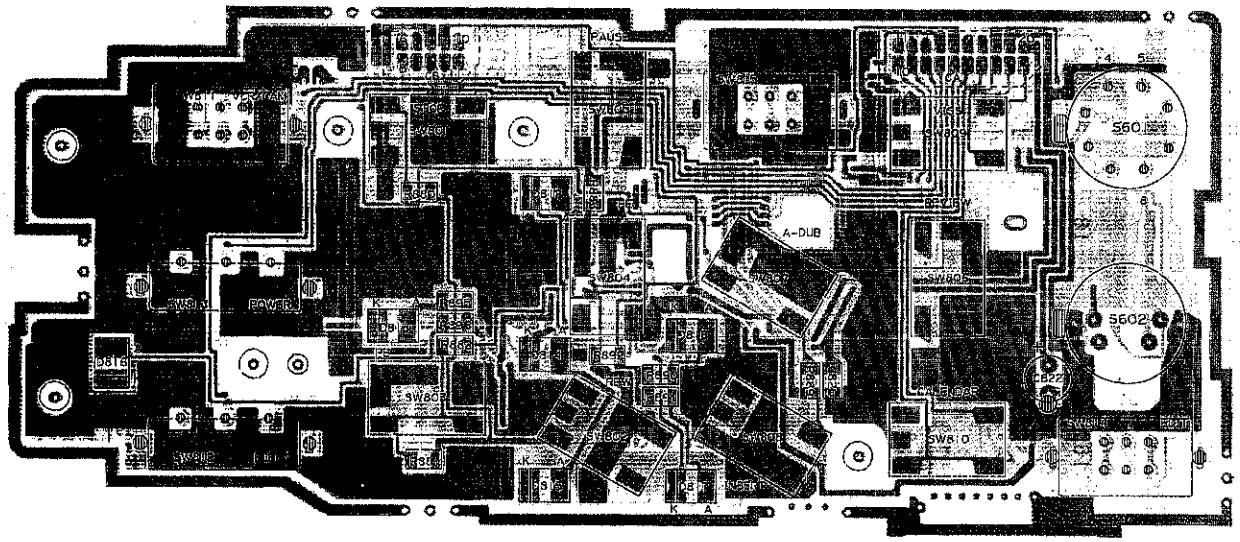


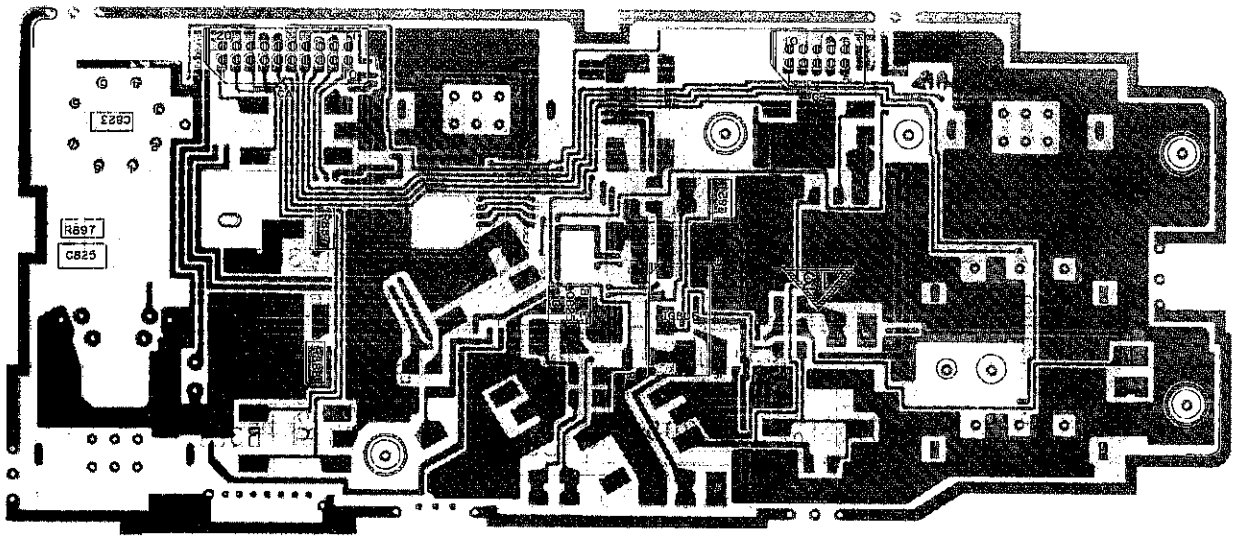
HEAD AMP. P.W.B.


P14
P25
C301
S2U

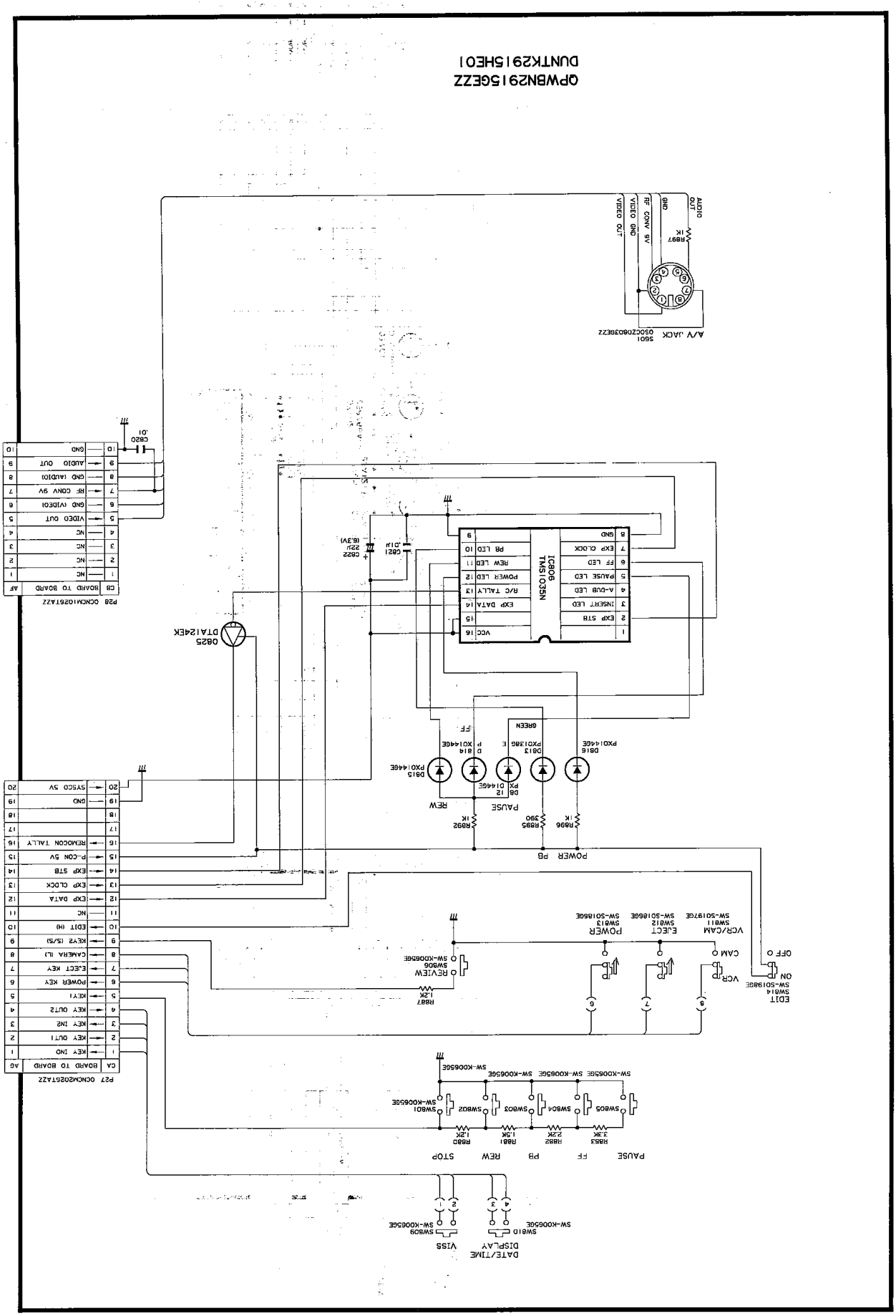

Q302
C314
L304
L303
R302
C312
R304
R303
C303
R331
C316
R305
C304
R330
C315
R310
C317
C321
L305
C328
Q306
R335
C320
L306
Q307
C323
R313
C326
C327
C329
C331
R316
R326
R323
R322
R321
R320
C335
C336

OPERATION P.W.B.

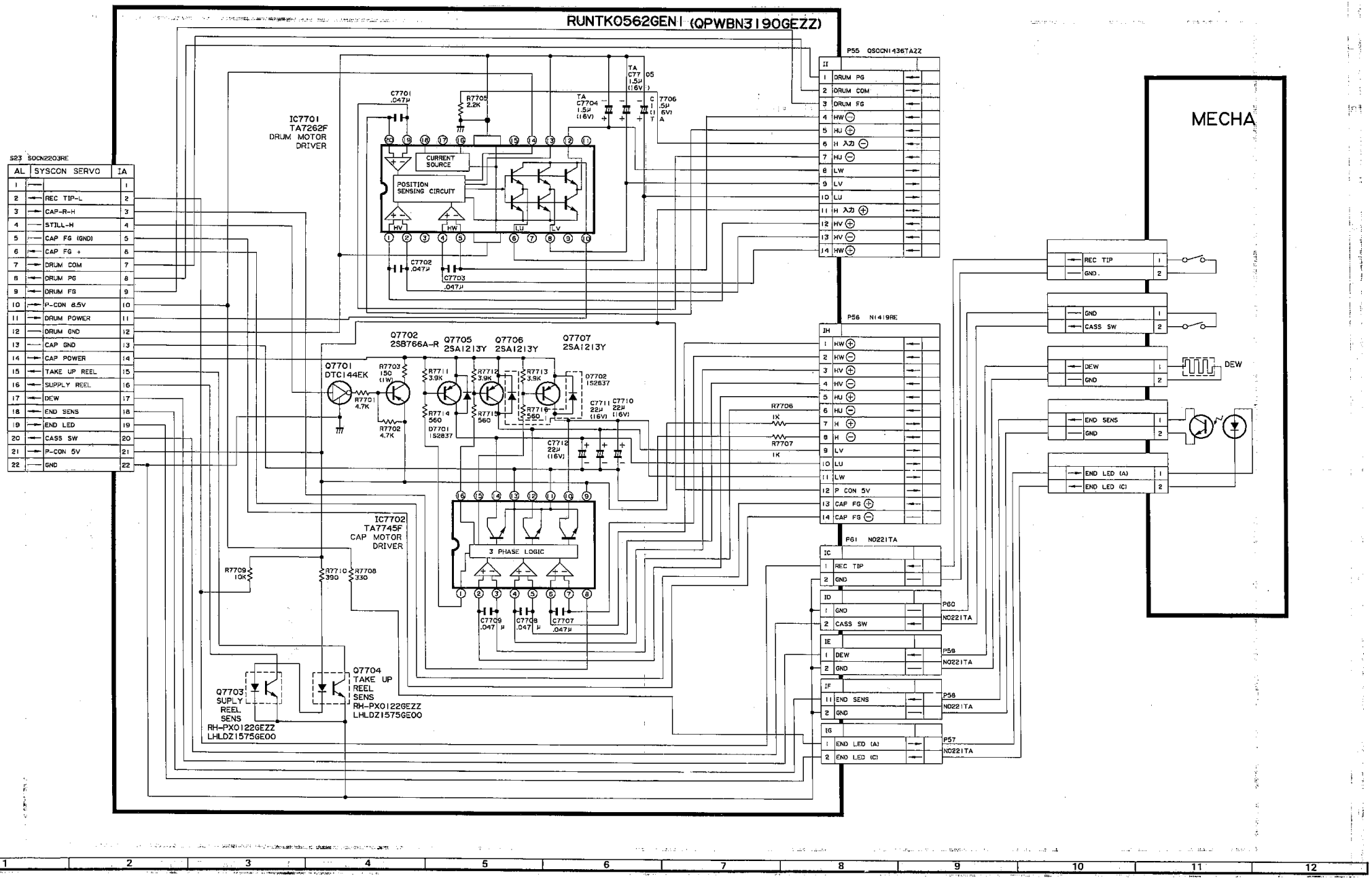




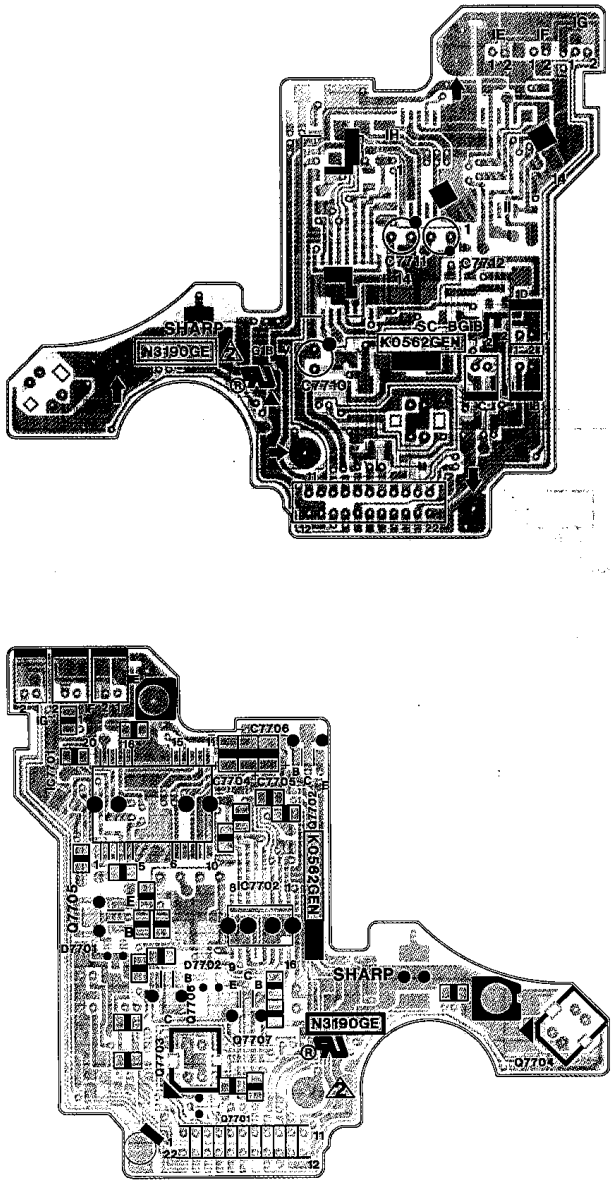
OPERATION CIRCUIT SCHEMATIC DIAGRAM



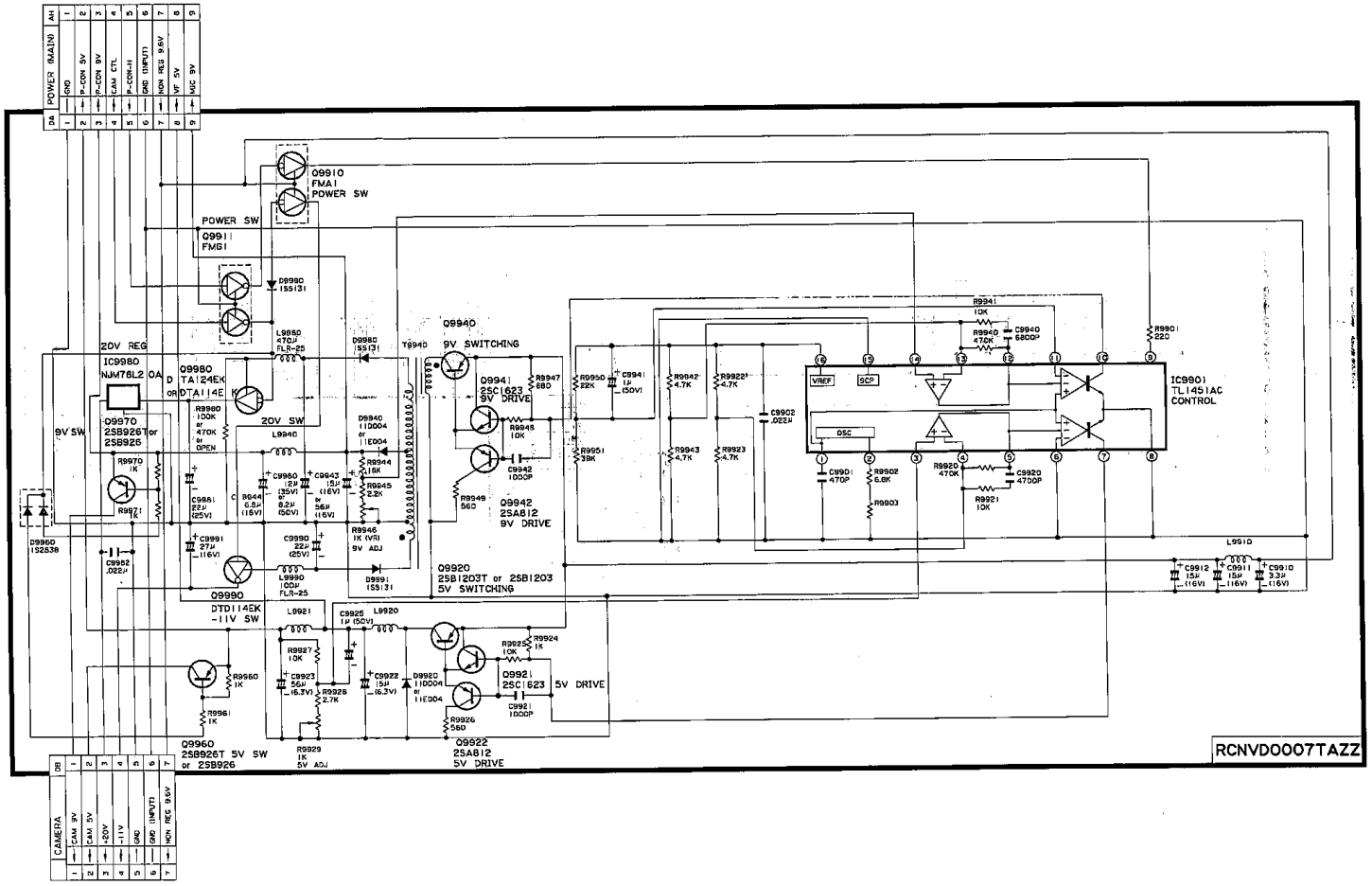
MECHA DRIVE SCHEMATIC DIAGRAM



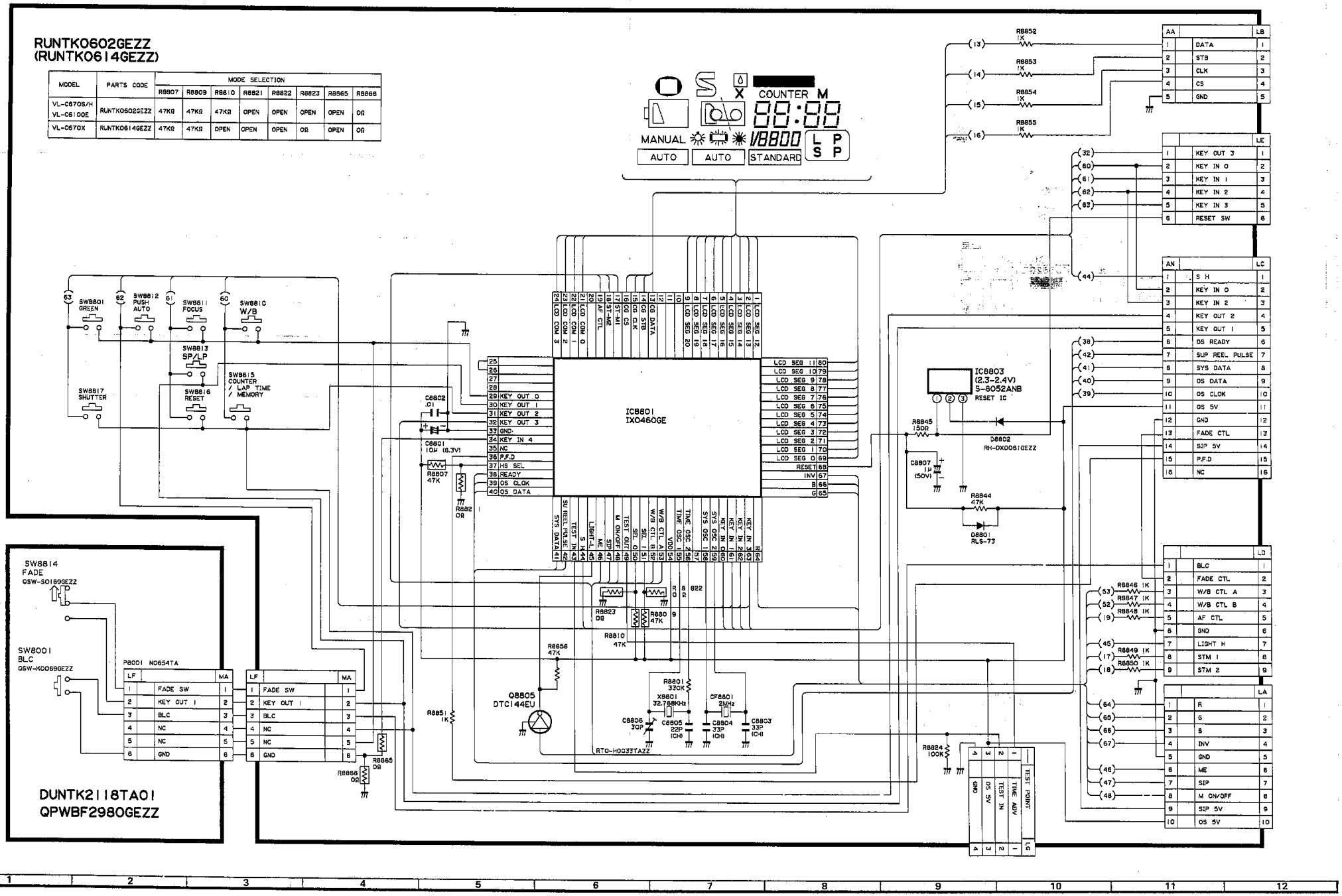
MECHA DRIVE P.W.B.



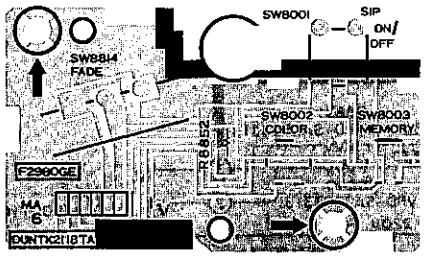
POWER UNIT CIRCUIT SCHEMATIC DIAGRAM

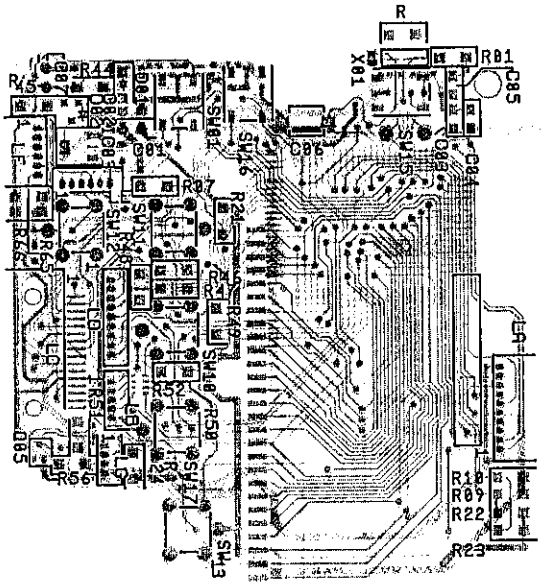


LCD UNIT SCHEMATIC DIAGRAM

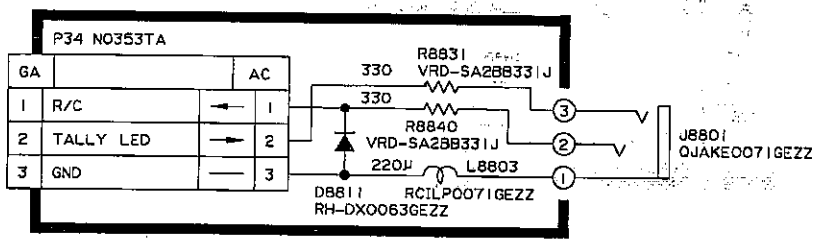

RUNTK0602GEZZ
(RUNTK0614GEZZ)
MODEL | PARTS CODE | MODE SELECTION | R8807 | R8809 | R8810 | R8821 | R8822 | R8823 | R8865 | R8866
VL-C670S/H VL-C6100E | RUNTK0602GEZZ | 47KΩ | 47KΩ | 47KΩ | OPEN | OPEN | OPEN | OPEN | 0Ω
VL-C670X | RUNTK0614GEZZ | 47KΩ | 47KΩ | OPEN | OPEN | OPEN | 0Ω | OPEN | 0Ω
COUNTER M
MANUAL
AUTO
AUTO
STANDARD
SW8801 GREEN
SW8812 PUSH AUTO
SW8811 FOCUS
SW8810 W/B
SW8813 SP/LP
SW8815 COUNTER / LAP TIME / MEMORY
SW8816 RESET
SW8817 SHUTTER
IC8801 IX0460GE
IC8803 (2.3-2.4V) S-8052ANB RESET IC
D8802 RH-DX0061GEZZ
D8801 RLS-73
Q8805 DTC144EU
X8801 32.768KHz
CF8801 2MHz
SW8814 FADE QSW-S0169GEZZ
SW8001 BLC QSW-K0069GEZZ
P8001 N0654TA
DUNTK2118TA01
QPWBF2980GEZZ
RTO-H0033TAZZ
AA DATA STB CLK CS GND
LB
LE KEY OUT 3 KEY IN 0 KEY IN 1 KEY IN 2 KEY IN 3 RESET SW
AN S H KEY IN 0 KEY IN 2 KEY OUT 2 KEY OUT 1 OS READY SUP REEL PULSE SYS DATA OS DATA OS CLOK OS 5V GND FADE CTL SIP 5V P.F.D NC
LC
LD BLC FADE CTL W/B CTL A W/B CTL B AF CTL GND LIGHT H STM 1 STM 2
LA R G B INV GND ME SIP M ON/OFF SIP 5V OS 5V
TEST POINT GND OS 5V TEST IN TIME ADV
LG

LCD UNIT P.W.B.

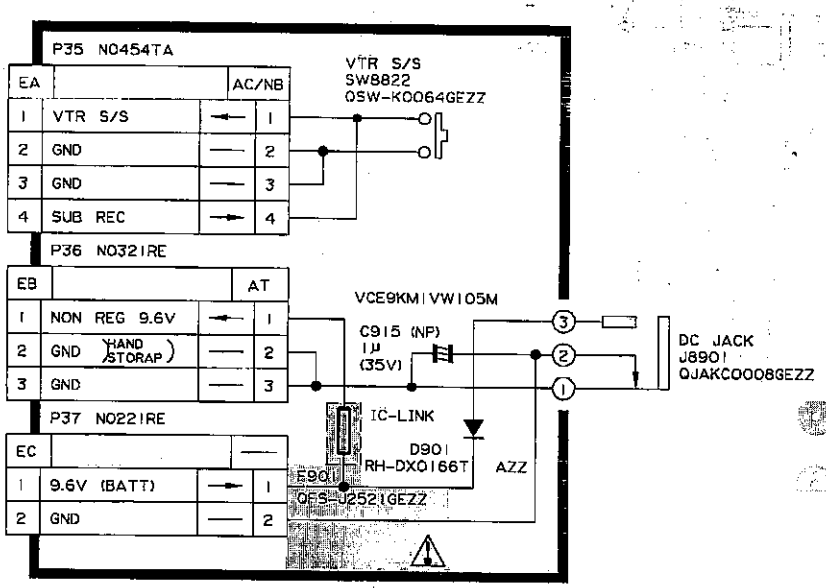

SW8001
SIP
ON/
OFF
SW8014
FADE
SW8002
COLOR
SW8003
MEMORY
F2980GE
DUNTK2118TA

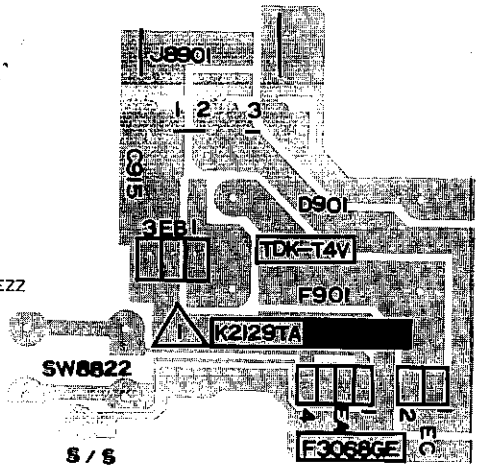

R
R01
C85
X01
C86
C84
C87
R37
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R56
R57
R58
R59
R60
R61
R62
R63
R64
R65
R66
R67
R68
R69
R70
R71
R72
R73
R74
R75
R76
R77
R78
R79
R80
R81
R82
R83
R84
R85
R86
R87
R88
R89
R90
R91
R92
R93
R94
R95

REMOTE CONTROL JACK CIRCUIT SCHEMATIC DIAGRAM, P.W.B.



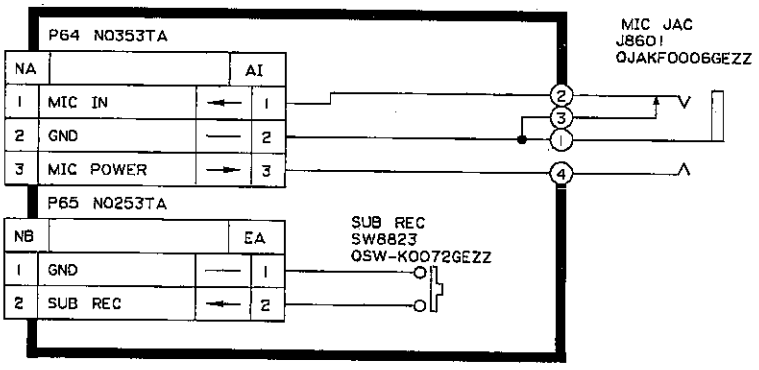
VCR S/S CIRCUIT SCHEMATIC DIAGRAM, P.W.B.

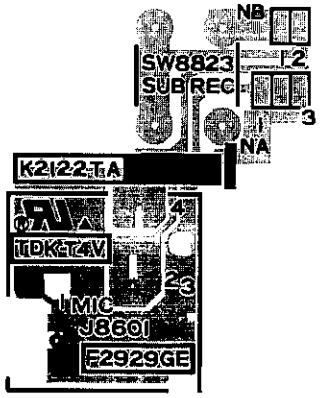




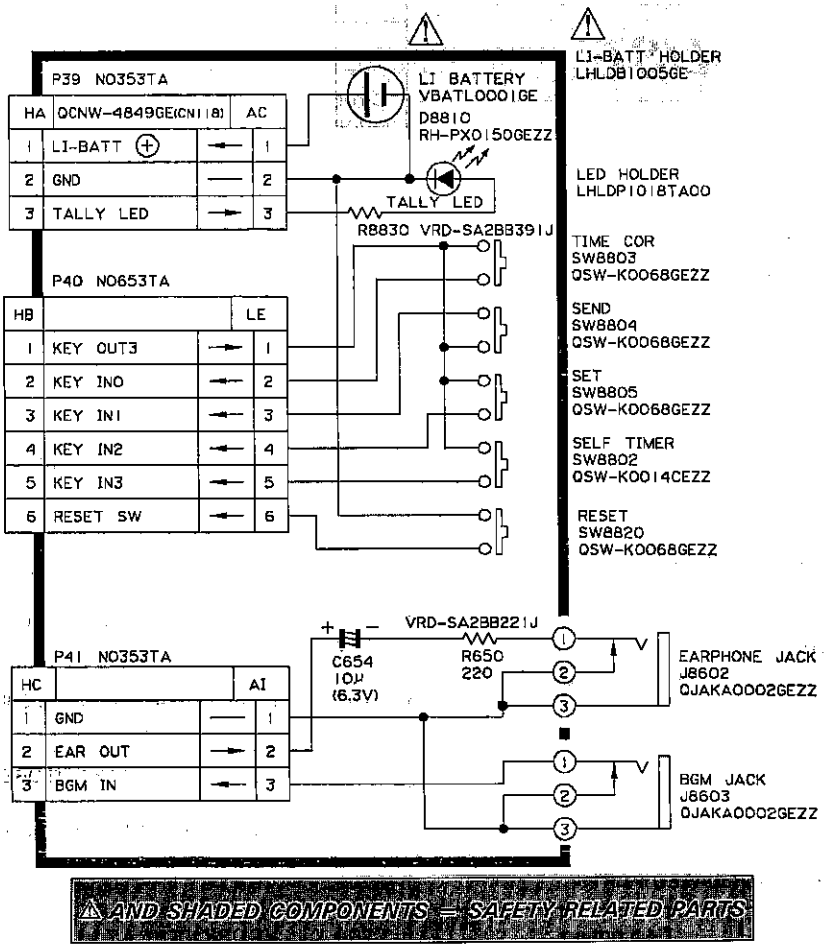
⚠ AND SHADED COMPONENTS ARE SAFETY RELATED PARTS.

MIC. JACK CIRCUIT SCHEMATIC DIAGRAM, P.W.B.

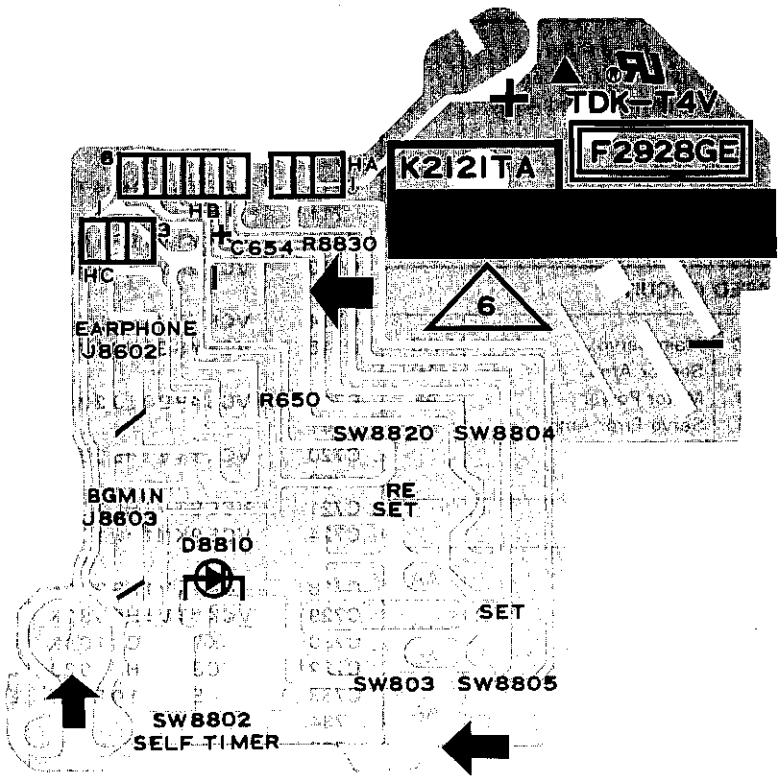




LI BATTERY CIRCUIT SCHEMATIC DIAGRAM, P.W.B.



⚠ AND SHADED COMPONENTS = SAFETY RELATED PARTS



PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual; electrical components having such features are identified by ⚠ in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE

• **PWB Unit ..... Not Supplied.**

⚠MARK: SAFETY RELATED PARTS

Ref. No.	Part No.	Description	Price Code
MAIN CIRCUIT			
	DUNTK3001HE07	Main Circuit (Servo, Audio, System Control, C, Power) Board Ass'y	—
(SERVO SECTION)			
INTEGRATED CIRCUITS			
IC701	RH-iX0464GEZZ	Main Servo	AS
IC702	VHiiR3P71//-1	Sensor Amp.	AQ
IC704	VHiNJM2049C-1	Motor Power	AK
IC705	VHiNJM2902M-1	Servo Error Amp.	AF
TRANSISTORS			
Q702, 703	VSUN2113///-1	LP Tracking SP-H	AA
Q704	VSFMA2/////-1	Motor Mute	AC
Q705, 706	VS2SB956R//-1	Capstan Drive Drum Drive	AC
Q710, 711	VSUN5213///-1	VS Gain Tracking Shift	AA
Q7801	VS2SC4081R/-1	8.5V Regulator	AA
DIODES			
D705, 706	VHDSFPB54//2E		AC
COILS			
L701	RCiLP0051GEZZ	22μH	AD
L702, 703	RCiLP0067GEZZ	220μH	AD
L704, 706	VP-1M101K7R7N	100μH	AC
FILTER			
FL701	RMPTA0008GEZZ		AM
CONTROLS			
R710, 717	RVR-M7805TAZZ	100k ohm, PB HSW P Tracking Preset	AC
R769	RVR-B4342GEZZ	200k ohm, Tracking	AG
CAPACITORS			
C701, 725	VCSAPD1AJ105M	Tantalum, 10V, 1μF	AD
C703, 736	VCKYCY1HF103Z	Ceramic, 50V, 0.01μF	AA
C704	VCCSTV1HL471J	Ceramic, 50V, 470pF	AA
C705, 706	VCKYCY1HB102K	Ceramic, 50V, 0.001μF	AA
C707	VCEAKM0JW226M	Electrolytic, 6.3V, 22μF	AB
C708	VCKYTQ1CF105Z	Ceramic, 16V, 1μF	AC
C709, 716, 726, 727	VCEAKM0JW106M	Electrolytic, 6.3V, 10μF	AB
C710, 711	VCFYSG1HB473J	Metallized Polypro, 50V, 0.047μF	AA
C712	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C713	VCE9KM0JW106M	Electrolytic (N.P), 6.3V, 10μF	AC
C714	VCKYTV1HF273Z	Ceramic, 50V, 0.027μF	AB
C715	VCFYSG1HB184J	Metallized Polypro, 50V, 0.18μF	AB
C719, 741	VCSAP0JJ225M	Tantalum, 6.3V, 2.2μF	AD
C720 723	VCKYTV1HB562K	Ceramic, 50V, 0.0056μF	AA
C721	VCCSTV1HL101J	Ceramic, 50V, 0.0001μF	AA
C724	VCE9KM1VW105M	Electrolytic (N.P), 35V, 1μF	AB
C728	VCKYTV1HB272K	Ceramic, 50V, 0.0027μF	AA
C729	VCKYTV1HB682K	Ceramic, 50V, 0.0063μF	AA
C730	VCKYTQ1CR104K	Ceramic, 16V, 0.1μF	AB
C732	VCCSTV1HL102J	Ceramic, 50V, 0.001μF	AA
C733, 734, 735	RC-EZ0110TAZZ	Electrolytic, 16V, 100μF	AC
C742	VCKYTV1EB153K	Ceramic, 25V, 0.015μF	AB
C743	VCKYTV1HB102K	Ceramic, 50V, 0.001μF	AA
C744	VCKYTQ1HF223Z	Ceramic, 50V, 0.022μF	AA
C7801	VCEAKM1CW226M	Electrolytic, 16V, 22μF	AB

Ref. No.	Part No.	Description	Price Code
RESISTORS			
R701, 702, 734, 770	VRS-CY1JF104J	Chip, 100k ohm	AA
R703, 735	VRS-CY1JF153J	Chip, 15k ohm	AA
R704, 720, 722, 728, 742	VRS-CY1JF103J	Chip, 10k ohm	AA
R706	VRS-CY1JF105J	Chip, 1Meg ohm	AA
R707, 718, 748, 755, 765	VRS-CY1JF102J	Chip, 1k ohm	AA
R711, 729	VRS-CY1JF472J	Chip, 4.7k ohm	AA
R712, 739	VRS-CY1JF332J	Chip, 3.3k ohm	AA
R713, 733	VRS-CY1JF222J	Chip, 2.2k ohm	AA
R719, 721	VRS-TV1JD221J	Chip, 220 ohm	AA
R723	VRS-CY1JF393J	Chip, 39k ohm	AA
R724	VRS-CY1JF683J	Chip, 68k ohm	AA
R725, 743	VRS-CY1JF183J	Chip, 18k ohm	AA
R726, 758	VRS-CY1JF273J	Chip, 27k ohm	AA
R727	VRS-CY1JF473J	Chip, 47k ohm	AA
R731, 732	VRS-TV1JD223F	Chip, 22k ohm	AA
R736	VRS-CY1JF224J	Chip, 220k ohm	AA
R737	VRS-CY1JF124J	Chip, 120k ohm	AA
R738	VRS-CY1JF184J	Chip, 180k ohm	AA
R741, 744	VRS-CY1JF562J	Chip, 5.6k ohm	AA
R745	VRS-CY1JF391J	Chip, 390 ohm	AA
R746	VRS-CY1JF152J	Chip, 1.5k ohm	AA
R747	VRS-CY1JF561J	Chip, 560 ohm	AA
R749	VRS-CY1JF563J	Chip, 56k ohm	AA
R759	VRS-CY1JF223J	Chip, 22k ohm	AA
R767	VRS-CY1JF123J	Chip, 12k ohm	AA
R768	VRS-CY1JF682J	Chip, 6.8k ohm	AA
R772	VRS-CY1JF224J	Chip, 220k ohm	AA
R774	VRS-TV1JD000J	Chip, 0 ohm	AA
R7801	VRS-TQ2BD101J	Chip, 100 ohm	AA
MISCELLANEOUS			
P12	QPLGN2203REZZ	Plug, 22 Pin (AL)	AE
TP701, 702	QLUGP0109GEFW	Test Pin	AA
(AUDIO SECTION)			
INTEGRATED CIRCUITS			
IC630	VHiBA7755//-1	Head Switching	AD
IC6600	RH-iZ0093TAZZ	Audio Signal Process	AM

Ref. No.	Part No.	Description	Price Code
TRANSISTORS			
Q601	VS2SC4081R/-1	Fade Buffer	AA
Q691	VSUN5213///-1	Bias Control	AA
Q693	VS2SA1298Y/-1	Bias Power	AB
Q696	VS2SD1664R/-1	Bias Osc.	AC
COILS			
L601	VP-1M221K170N	220μH	AC
L690	VP-3M820K3R5U	82μH	AC
FILTERS			
FL610	RCiLi0071GEZZ		AF
FL650	RCiLF0084GEZZ		AF
TRANSFORMER			
T690	RTRNH0050GEZZ		AD
CONTROLS			
R638	RVR-M7799TAZZ	10k ohm, PB Level	AC
R697	RVR-M7807TAZZ	220k ohm, REC Bias	AC
CAPACITORS			
C602, 670	VCEAKM1AW336M	Electrolytic, 10V, 33μF	AB
C605	VCE9KM0JW226M	Electrolytic, (N.P), 6.3V, 22μF	AC
C608	RC-EZ0151TAZZ	Electrolytic, 6.3V, 220μF	AB
C614, 651	VCEAKM0JW226M	Electrolytic, 6.3V, 22μF	AB
C660	VCEAKM1CW475M	Electrolytic, 16V, 4.7μF	AB
C661	VCKYTV1HB222K	Ceramic, 50V, 2200pF	AA
C675	VCE9KM1HW105M	Electrolytic (N.P), 50V, 1μF	AC
C692	RC-EZ0119GEZZ	Electrolytic, 16V, 56μF	AC
C695, 696	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C697	VCQRBG2AA153J	Polypro Film, 100V, 0.015μF	AC
C698	VCCSTV1HL221J	Ceramic, 50V, 220pF	AA
RESISTORS			
R605, 606	VRS-TV1JD472J	Chip, 4.7k ohm	AA
R615	VRS-TV1JD333J	Chip, 33k ohm	AA
R616	VRS-TV1JD822J	Chip, 8.2k ohm	AA
R630	VRS-TV1JD100J	Chip, 10 ohm	AA
R653	VRS-TV1JD102J	Chip, 1k ohm	AA
R654	VRS-TV1JD392J	Chip, 3.9k ohm	AA
R657	VRS-TV1JD562J	Chip, 5.6k ohm	AA
R660	VRS-TV1JD124J	Chip, 120k ohm	AA
R661	VRS-TV1JD153J	Chip, 15k ohm	AA
R670	VRS-TV1JD123J	Chip, 12k ohm	AA
R679, 692, 698	VRS-TV1JD000J	Chip, 0 ohm	AA

Ref. No.	Part No.	Description	Price Code
R682	VRS-TV1JD680J	Chip, 68 ohm	AA
R683	VRS-TV1JD223J	Chip, 22k ohm	AA
R690, 691	VRS-TV1JD103J	Chip, 10k ohm	AA
R695, 696	VRS-TQ2BD100J	Chip, 10 ohm	AA
MISCELLANEOUS			
P9	QPLGN0653TAZZ	Plug, 6 Pin (AI)	AB
P10	QPLGN0854TAZZ	Plug, 8 Pin (AJ)	AC
P11	QPLGN0254TAZZ	Plug, 2 Pin (AK)	AB
TP601, 630, 631, 691	QLUGP0109GEFW	Test Pin	AA
(SYSTEM CONTROL SECTION)			
INTEGRATED CIRCUITS			
IC801	RH-iX0472GEZZ	System Control	AW
IC802	VHiPST529DM-1	Reset	AE
IC803	VHiTC4S81F/-1	AND Gate	AC
IC805	VHiTA7291F/-1	Loading Motor Drive	AK
TRANSISTORS			
Q801, 809, 813	VS2SA1576R/-1	5V Regulator Switching Inversion Amp.	AA
Q802, 806, 814, 815, 831, 832	VS2SC4081R/-1	5V Regulator Tally LED Driver End LED Driver Reel Pulse Amp. Sup. Reel Amp. Tup. Reel Amp.	AA
Q803, 807	VS2SA1298Y/-1	SV Switching Switching	AB
Q804, 805, 808, 817, 824, 826	VSUN5213///-1	Switching Inverter Switching Buffer Switching Mute	AA
Q810, 822, 823	VSUN2113///-1	Switching	AA
Q811	VSXN6501///-1	Dew Detector	AB
Q819	VS2SK94////-1	LI Battery Switching	AE
DIODES			
D801	RH-EX0447GEZZ		AA
D802, 803, 804, 805, 806, 819, 820	VHDDAN202U/-1		AA
D807	RH-EX0464GEZZ		AA

Ref. No.	Part No.	Description	Price Code
COIL			
L801	VP-VM220K1R7N	22μH	AC
CERAMIC FILTER			
CF801	RFiLC0024GEZZ	4MHz	AE
CONTROL			
R842	RVR-M7799TAZZ	10k ohm, Battery Detector	AC
CAPACITORS			
C801, 803	VCKYCY1HF103Z	Ceramic, 50V, 0.01μF	AA
C802, 804	VCEAKM0JW476M	Electrolytic, 6.3V, 47μF	AB
C805, 824	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C806, 807	VCCCTV1HH330J	Ceramic, 50V, 33pF	AA
C808, 809	VCEAPC1CW106M	Electrolytic, 16V, 10μF	AB
C810	VCSAPD1CJ105M	Tantalum, 16V, 1μF	AC
C811, 812, 813, 814, 816, 817, 818	VCKYCY1HB102K	Ceramic, 50V, 1000pF	AA
C815	VCKYCY1EB103K	Ceramic, 25V, 0.01μF	AA
C819	VCE9KM1CW106M	Electrolytic, (N.P), 16V, 10μF	AB
RESISTORS			
R801	VRS-CY1JF153J	Chip, 15k ohm	AA
R802	VRS-TV1JD103F	Chip, 10k ohm	AA
R803	VRS-TV1JD104F	Chip, 100k ohm	AA
R804, 851, 852, 853, 854, 855, 856, 857, 858, 859, 861, 870	VRS-CY1JF333J	Chip, 33k ohm	AA
R805, 806, 845, 849, 886	VRS-CY1JF682J	Chip, 6.8k ohm	AA
R807, 838, 839, 860	VRS-CY1JF822J	Chip, 8.2k ohm	AA

Ref. No.	Part No.	Description	Price Code
R809, 836	VRS-CY1JF105J	Chip, 1Meg ohm	AA
R810	VRS-CY1JF472J	Chip, 4.7k ohm	AA
818, 823, 834, 841			
R811,	VRS-CY1JF103J	Chip, 10k ohm	AA
815, 817, 819, 820, 821, 827, 828, 829, 830, 831, 832, 835, 844, 873, 8884			
R813,	VRS-CY1JF562J	Chip, 5.6k ohm	AA
822, 826			
R814	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R816, 8824	VRS-TV1JD000J	Chip, 0 ohm	AA
R824,	VRS-CY1JF332J	Chip, 3.3k ohm	AA
825, 833			
R837,	VRS-CY1JF563J	Chip, 56k ohm	AA
843			
R840,	VRS-CY1JF683J	Chip, 68k ohm	AA
848, 863, 867			
R846	VRS-CY1JF394J	Chip, 390k ohm	AA
R847,	VRS-CY1JF124J	Chip, 120k ohm	AA
862, 866			
R850	VRS-CY1JF823J	Chip, 82k ohm	AA
R864,	VRS-CY1JF104J	Chip, 100k ohm	AA
865, 868, 869			
R874	VRS-CY1JF101J	Chip, 100 ohm	AA
R885	VRS-CY1JF122J	Chip, 1.2k ohm	AA
R898,	VRS-CY1JF102J	Chip, 1k ohm	AA
8883			
R8880,	VRS-CY1JF473J	Chip, 47k ohm	AA
8881, 8882			
MISCELLANEOUS			
P3	QPLGN0854TAZZ	Plug, 8 Pin (AC)	AC
P13	QPLGN0454TAZZ	Plug, 4 Pin (AM)	AB
S14	QSōCN1630REZZ	Socket, 16 Pin (AN)	AE
TP801,	QLUGP0109GEFW	Test Pin	AA
802			

Ref. No.	Part No.	Description	Price Code
(CHROMA SECTION)			
INTEGRATED CIRCUITS			
IC4401	VHiTA8607F/-1	RF AGC	AN
IC8802	VHiUPD6105G-1	Chara. Generator	AU
TRANSISTORS			
Q4401	VS2SD1819A/-1	E.F.	AB
Q5501	VSXN6501///-1	PB. Chroma Amp & E.F.	AB
DIODES			
D8812, 8813	VHDDAN202U/-1		AA
COILS			
L4401, 8802	VP-VM101K3R6N	100μH	AC
L4402	VP-1M150K2R2N	15μH	AC
L4403	VP-1M151K110N	150μH	AC
L4404	VP-1M470K5R4N	47μH	AC
L5501	VP-1M680K6R9N	68μH	AC
L8801	VP-1M560J6R2N	56μH	AC
FILTER			
FL5501	RCiLF0131GEZZ		AM
CAPACITORS			
C4401, 4402, 4406, 4407, 4408, 4412, 5503	VCKYTV1HF103Z	Electrolytic, 50V, 0.01μF	AA
C4403	VCCCTV1HH820J	Ceramic, 50V, 82pF	AA
C4404	VCCCTV1HH391J	Ceramic, 50V, 390pF	AA
C4405	VCEAKM0JW476M	Electrolytic, 63V, 47μF	AB
C4409, 8810	VCCCTV1HH330J	Ceramic, 50V, 33pF	AA
C4413	VCSAPD1AJ105M	Tantalum, 10V, 1μF	AD
C5501	VCCCTV1HH680J	Ceramic, 50V, 68pF	AA
C5502	VCCCTV1HH151J	Ceramic, 50V, 150pF	AA
C5504	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C5505	VCCCTV1HH181J	Ceramic, 50V, 180pF	AA
C8809	RTō-H0033TAZZ	Trimmer, 20pF	AD
C8811	VCEAKM0JW107M	Electrolytic, 6.3V, 100μF	AB
C8812	VCKYTV1HB102K	Ceramic, 50V, 0.001μF	AA
C8813, 8814, 8815, 8816	VCCSTV1HL331J	Ceramic, 50V, 330pF	AA
RESISTORS			
R4401	VRS-TV1JD271J	Chip, 270 ohm	AA
R4402	VRS-TV1JD333J	Chip, 33k ohm	AA

Ref. No.	Part No.	Description	Price Code
R4403	VRS-TV1JD563J	Chip, 56k ohm	AA
R4404, 4405, 4419, 5501, 5506, 8801, 8802	VRS-TV1JD102J	Chip, 1k ohm	AA
R4406	VRS-TV1JD101J	Chip, 100 ohm	AA
R4407	VRS-TV1JD562J	Chip, 5.6k ohm	AA
R4408	VRS-TV1JD182J	Chip, 1.8k ohm	AA
R4409, 4411	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R4410	VRS-TV1JD821J	Chip, 820 ohm	AA
R5502, 5505	VRS-TV1JD122J	Chip, 1.2k ohm	AA
R5503	VRS-TV1JD153J	Chip, 15k ohm	AA
R5504	VRS-TV1JD103J	Chip, 10k ohm	AA
R5507	VRS-TV1JD680J	Chip, 68 ohm	AA
R5508	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R8812	VRS-TV1JD104J	Chip, 100k ohm	AA
R8813, 8814, 8815, 8816	VRS-CY1JF222J	Chip, 2.2k ohm	AA
MISCELLANEOUS			
P1	QPLGN0554TAZZ	Plug, 5 Pin (AA)	AB
P16	QPLGN0654TAZZ	Plug, 6 Pin (AÖ)	AB
TP8801, 8802, 8803	QLUGP0109GEFW	Test Pin	AA
(POWER SECTION)			
TRANSISTORS			
Q927, 928	VS2SB710RS/-1	5V Switching	AB
Q929	VSFMG2/////-1	Switching	AC
COILS			
L927, 929	VP-JM101K1R3N	100μH	AD
L928	VP-3M470K1R9U	47μH	AC
CAPACITORS			
C924, 928	RC-EZ0151TAZZ	Electrolytic, 6.3V, 220μF	AB
C927	RC-EZ0119GEZZ	Electrolytic, 16V, 56μF	AC
C929	VCEAKM0JW476M	Electrolytic, 6.3V, 47μF	AB
RESISTORS			
R927, 928, 929, 930	VRS-TV1JD102J	Chip, 1k ohm	AA

Ref. No.	Part No.	Description	Price Code
MISCELLANEOUS			
P8	QPLGN0921REZZ	Plug, 9 Pin (AH)	AB
P33	QPLGN0221REZZ	Plug, 2 Pin (AT)	AA
Y/C CIRCUIT			
	DUNTK3002HE01	Y/C Circuit Board Ass'y	—
INTEGRATED CIRCUITS			
IC201	VHi AN3231FA-1	Y-Process	AV
IC202	VHi CX20095A-1	Video Out Drive	AN
IC203	VHi NJM2234M-1	C-EE/PB Switching	AF
IC401	VHi MS69653M-1	IH CCD D.L.	AP
IC501	VHi TA8604F/-1	C-Process	AR
TRANSISTORS			
Q201, 503	VSXN6501///-1	Clamp & E.F. C. Amp. & E.F.	AB
Q204	VS2SC3938//-1	REC. Chara Mix	AC
Q205, 401	VSUN5213///-1	SP/LP Switching EE. Switching	AA
Q206, 207, 208, 403, 404, 501	VS2SD1819A/-1	E.F	AB
Q209	VSUN5113///-1	V-Mute Switching	AA
Q402	VSXN4601///-1	Y-Amp.	AB
Q405, 502	VS2SB1218A/-1	E.F.	AA
DIODES AND LED'S			
D201, 202, 203, 204, 401, 501	VHDDAN202U/-1		AA
PACKAGED CIRCUITS			
X501	RCRSB0058GEZZ	Crystal	AH
COILS			
L201, 403	VP-VM101K3R6N	100μH	AC
L204	VP-1M390K4R9N	39μH	AC
L205	VP-1M181K130N	180μH	AC
L206, 503	VP-VM220K1R7N	22μH	AC
L401	VP-1M220K2R9N	22μH	AC
L402	VP-1M121K9R0N	120μH	AC
L404, 405, 504	VP-1M470K5R4N	47μH	AC

Ref. No.	Part No.	Description	Price Code
L501	VP-1M180J2R5N	18μH	AC
L502	VP-1M100K1R6N	10μH	AC
L506	VP-1M150K2R2N	15μH	AC
FILTERS			
FL201	RCILF0130GEZZ		AL
FL401	RCILZ0278GEZZ		AP
FL501	RCILV0042GEZZ		AF
FL502	RCILF0096GEZZ		AF
FL503	RCILV0049GEZZ		AF
DELAY LINE			
DL501	RCILZ0303GEZZ		AP
CONTROLS			
R206, 229, 234, 238, 414	RVR-M7799TAZZ	10k ohm, EE Level Car D. Clip W. Clip PB Level	AC
R221	RVR-M7790TAZZ	330 ohm, REC. Chara Mix Level	AC
R232	RVR-M7797TAZZ	4.7k ohm, Dev.	AC
R240, 426	RVR-M7793TAZZ	1k ohm, REC. FM Level Line Corr.	AC
R506	RVR-M7805TAZZ	220k ohm, APC	AC
R513	RVR-M7791TAZZ	470 ohm, REC. Chroma Level	AC
CAPACITORS			
C201, 203, 213, 214, 215, 232, 234, 421	VCSAPH1AJ475M	Tantalum, 10V, 4.7μF	AE
C202, 418	VCKYTV1EB223K	Ceramic, 25V, 0.022μF	AB
C204, 210, 522	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C205, 425	VCEAKM0JW226M	Electrolytic, 6.3V, 22μF	AB
C206, 208, 211, 220, 221, 222, 223, 229, 233, 237, 401, 403, 413, 414, 415, 416, 417, 419, 423, 424, 426, 428, 509, 516, 519, 520, 521, 523, 524, 526, 527, 529	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C207, 420	VCEAPC1CW106M	Electrolytic, 16V, 10μF	AB
C209	VCCCTV1HH560J	Ceramic, 50V, 56pF	AA
C212, 236, 510	VCEAKM0JW476M	Electrolytic, 6.3V, 47μF	AB
C216, 228, 511	VCKYTV1EF473Z	Ceramic, 25V, 0.047μF	AB
C217, 402	VCCCTV1HH151J	Ceramic, 50V, 150pF	AA
C218	VCCCTV1HH181J	Ceramic, 50V, 180pF	AA
C219	VCCSTV1HL102J	Ceramic, 50V, 1000pF	AA
C224	VCCCTV1HH820J	Ceramic, 50V, 82pF	AA
C225	VCCCTV1HH271J	Ceramic, 50V, 270pF	AA
C226, 508	VCCCTV1HH470J	Ceramic, 50V, 47pF	AA
C227, 513	VCCCTV1HH331J	Ceramic, 50V, 330pF	AA
C230, 404, 407, 410, 517	VCCCTV1HH101J	Ceramic, 50V, 100pF	AA
C231	VCE9KM0JW475M	Electrolytic (N.P.), 6.3V, 4.7μF	AC
C235	VCEAKM0JW107M	Electrolytic, 6.3V, 100μF	AB
C405	VCSAPD0JJ225M	Tantalum, 6.3V, 2.2μF	AD
C406	VCCSTV1HL561J	Ceramic, 50V, 560pF	AA
C408	VCCCTV1HH121J	Ceramic, 50V, 120pF	AA
C409	VCSAPD0JJ335M	Tantalum, 6.3V, 3.3μF	AC
C411, 430	VCCCTV1HH330J	Ceramic, 50V, 33pF	AA
C412	VCEAPC0JW476M	Electrolytic, 6.3V, 47μF	AC
C422	VCKYTQ1CF474Z	Ceramic, 16V, 0.47μF	AB
C427	VCEAKG1CW226M	Electrolytic, 16V, 22μF	AB
C429, 504, 507	VCCCTV1HH220J	Ceramic, 50V, 22pF	AA
C501, 505, 515, 518, 525	VCSAPD1AJ105M	Tantalum, 10V, 1μF	AD
C502	VCKYTV1HB392K	Ceramic, 50V, 3900pF	AA
C503	VCCCTV1HH510J	Ceramic, 50V, 51pF	AA
C506	VCKYTV1HB222K	Ceramic, 50V, 2200pF	AA
C512	VCCCTV1HH4R0C	Ceramic, 50V, 4pF	AA
C514	VCCCTV1HH221J	Ceramic, 50V, 220pF	AA

Ref. No.	Part No.	Description	Price Code
RESISTORS			
R201, 241, 519	VRS-TV1JD223J	Chip, 22k ohm	AA
R202	VRS-TV1JD564J	Chip, 560k ohm	AA
R203	VRS-TV1JD474J	Chip, 470k ohm	AA
R204	VRS-TV1JD225J	Chip, 2.2Meg ohm	AA
R205, 207, 401, 415, 420, 429	VRS-TV1JD472J	Chip, 4.7k ohm	AA
R208, 228, 246, 403, 413	VRS-TV1JD562J	Chip, 5.6k ohm	AA
R209	VRS-TV1JD105J	Chip, 1Meg ohm	AA
R210, 219, 242, 260, 419	VRS-TV1JD563J	Chip, 56k ohm	AA
R211, 230	VRS-TV1JD683J	Chip, 68k ohm	AA
R212, 218, 405	VRS-TV1JD681J	Chip, 680 ohm	AA
R213, 231, 410, 411, 412	VRS-TV1JD182J	Chip, 1.8k ohm	AA
R214, 217, 226, 243, 248, 249, 250, 253, 254, 423, 424, 425, 510, 514, 516, 520, 521, 523	VRS-TV1JD102J	Chip, 1k ohm	AA
R220, 406	VRS-TV1JD821J	Chip, 820 ohm	AA
R222, 251, 421, 422, 517, 525	VRS-TV1JD122J	Chip, 1.2k ohm	AA
R223, 404	VRS-TV1JD682J	Chip, 6.8k ohm	AA
R224, 258, 259	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R225, 402	VRS-TV1JD221J	Chip, 220 ohm	AA
R233, 237, 509	VRS-TV1JD183J	Chip, 18k ohm	AA
R235, 239	VRS-TV1JD123J	Chip, 12k ohm	AA
R236, 252, 503, 515	VRS-TV1JD103J	Chip, 10k ohm	AA
R244	VRS-TV1JD391J	Chip, 390 ohm	AA
R245, 417, 511, 512	VRS-TV1JD561J	Chip, 560 ohm	AA
R247, 408, 409	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R255	VRS-TV1JD182F	Chip, 1.8k ohm	AA
R256	VRS-TV1JD201F	Chip, 200 ohm	AA
R257	VRS-TV1JD471F	Chip, 470 ohm	AA
R261, 418	VRS-TV1JD104J	Chip, 100k ohm	AA
R262	VRS-TV1JD750J	Chip, 75 ohm	AA
R270	VRS-TV1JD000J	Chip, 0 ohm	AA
R407, 522, 524	VRS-TV1JD271J	Chip, 270 ohm	AA
R416	VRS-TV1JD153J	Chip, 15k ohm	AA
R427, 501	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R428	VRS-TV1JD473J	Chip, 47k ohm	AA
R502	VRS-TV1JD392J	Chip, 3.9k ohm	AA
R504, 526	VRS-TV1JD333J	Chip, 33k ohm	AA
R505, 507	VRS-TV1JD224J	Chip, 220k ohm	AA
R508	VRS-TV1JD272J	Chip, 2.7k ohm	AA
R518	VRS-TV1JD273J	Chip, 27k ohm	AA
MISCELLANEOUS PARTS			
P46	QPLGN0454TAZZ	Plug, 4 Pin (KD)	AB
TP201, 202, 203, 204, 205, 206, 401, 501	QLUGP0109GEFW	Test Pin	AA
HEAD AMP CIRCUIT			
	DUNTK2916HE04	Head Amp. Circuit Board Ass'y	–
INTEGRATED CIRCUIT			
IC301	VHiH118042A-1	REC/PB Amp.	AR
TRANSISTORS			
Q301	VSUN5213///-1	REC Inverter	AA

Ref. No.	Part No.	Description	Price Code
Q302, 306	VSFMG2/////-1	CH. Switching	AC
Q303, 304, 305, 307	VS2SD1757KS-1	Mute Switching	AC
COILS			
L301, 303, 304, 305, 306	VP-1M101K7R7N	100μH	AC
L302	VP-VM101K3R6N	100μH	AC
CAPACITORS			
C301, 306	VCKYTV1EF473Z	Ceramic, 25V, 0.047μF	AB
C302, 330	VCSAPB0JJ226M	Tantalum, 6.3V, 22μF	AE
C303, 304, 307, 312, 316, 319, 324, 329, 331, 332	VCKYTV1EB223K	Ceramic, 25V, 0.022μF	AB
C305, 328	RC-SZ0002GEZZ	Tantalum, 6.3V, 10μF	AE
C308, 309, 310, 313, 318, 322, 326, 327	VCSAPD1AJ105M	Tantalum, 10V, 1μF	AD
C311, 317, 320, 323, 333, 334, 335, 336	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C314, 315, 321, 325	VCCCTV1HH390J	Ceramic, 50V, 39pF	AA
RESISTORS			
R301	VRS-TV1JD123J	Chip, 12k ohm	AA
R302	VRS-TV1JD103J	Chip, 10k ohm	AA
R303	VRS-TV1JD104J	Chip, 100k ohm	AA
R304, 305, 310, 313, 316	VRS-TV1JD331J	Chip, 330 ohm	AA
R314	VRS-TV1JD100J	Chip, 10 ohm	AA
R320, 321, 322, 323, 330, 332, 334, 336	VRS-TV1JD182J	Chip, 1.8k ohm	AA
R326	VRS-TV1JD000J	Chip, 0 ohm	AA
R331, 333, 335, 337	VRS-TV1JD332J	Chip, 3.3k ohm	AA
MISCELLANEOUS			
P14	QPLGN0454TAZZ	Plug, 4 Pin (BG)	AB
P26	QPLGN0254TAZZ	Plug, 2 Pin (BF)	AB
S25	QSōCN1239REZZ	Socket, 12 Pin (BE)	AD
OPERATION CIRCUIT			
	DUNTK2915HE01	Operation Circuit Board Ass'y	—
INTEGRATED CIRCUIT			
IC806	VHiTMS1035NS1	LED Driver	AK
TRANSISTOR			
Q825	VSDTA124EK/-1	R/C Tally LED Driver	AB
DIODE			
D812, 814, 815, 816	RH-PX0144GEZZ	LED, PAUSE FF REW POWER	AB
D813	RH-PX0138GEZZ	LED, PB	AB
CAPACITORS			
C820, 821	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C822	VCEAKM0JW226M	Electrolytic, 6.3V, 22μF	AB
RESISTORS			
R880, 887	VRS-TV1JD122J	Chip, 1.2k ohm	AA
R881	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R882	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R883	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R892, 896, 897	VRS-TV1JD102J	Chip, 1k ohm	AA
R895	VRS-TV1JD391J	Chip, 390 ohm	AA

Ref. No.	Part No.	Description	Price Code
MISCELLANEOUS			
SW801, 802, 803, 804, 805, 806, 809, 810	QSW-K0065GEZZ	Switch, Stop REW PB FF Pause Review Viss Date/Time Display	AC
SW811	QSW-S0197GEZZ	Switch, VCR/CAM	AD
SW812, 813	QSW-S0186GEZZ	Switch, Eject Power	AD
SW814	QSW-S0198GEZZ	Switch, Edit	AD
S601	QSõCZ0803GEZZ	Jack, A/V	AF
LCD CIRCUIT			
	RUNTK0602GEZZ	LCD Circuit Board Ass'y (VL-C670S/H) (VL-C6100E)	—
	RUNTK0614GEZZ	LCD Circuit Board Ass'y (VL-C670X)	—
INTEGRATED CIRCUITS			
IC8801	RH-iX0460GEZZ	Display Micom	AW
IC8803	91BS8052ANBNE	2.3—2.4V Reset	AK
TRANSISTOR			
Q8805	VSDTC144EU/-1	Inverter	AB
DIODES			
D8801	VHDRLS73/ / /-1		AA
D8802	RH-DX0061GEZZ		AC
CERAMIC FILTER			
CF8801	RFiLC0031GEZZ	2MHz	AG
CRYSTAL OSCILLATOR			
X8801	91BDS-VT-200	32.768kHz	AF
CAPACITORS			
C8801	VCEAKU0JW106M	Electrolytic, 6.3V, 10μF	AB
C8802	VCKYTV1HB103M	Electrolytic, 16V, 0.01μF	AA
C8803, 8804	VCCCTV1HH330J	Ceramic, 50V, 33pF	AA
C8805	VCCCTV1HH220J	Ceramic, 50V, 22pF	AA
C8806	91BTZB04P400BB	Trimmer, 50V, 30pF	AG
C8807	VCEAKU1HW105M	Electrolytic, 50V, 1μF	AB

Ref. No.	Part No.	Description	Price Code
RESISTORS			
R8801	VRS-TQ2BD334J	Chip, 330k ohm	AA
R8807, 8809, 8810, 8844, 8856	VRS-TQ2BD473J	Chip, 47k ohm	AA
R8824	VRS-TV1JD104J	Chip, 100k ohm	AA
R8845	VRS-TQ2BD151J	150 ohm	AA
R8846, 8847, 8848, 8849, 8850, 8851	VRS-TQ2BD102J	1k ohm	AA
R8852, 8853, 8854, 8855	91BEA20101397A	Chip Resistor Array, 1k ohm	AC
R8866	VRS-TQ2BD000J	Chip, 0 ohm	AA
MISCELLANEOUS			
LCD8801	91BSLU1617	LCD (Not Available)	—
SW8801, 8815, 8816	91BSKHHPB	Switch, Green Counter Lap Time Memory Reset	AD
SW8810, 8811, 8812, 8813, 8817	91BSKHHPK	Switch, W/B Focus Push Auto SP/LP Shutter	AC
	QPLGN0553TAZZ	Plug, 5 Pin (LB)	AB
	QPLGN0653TAZZ	Plug, 6 Pin (LE)	AB
	QPLGN0953TAZZ	Plug, 9 Pin (LD)	AB
	QPLGN0654TAZZ	Plug, 6 Pin (LF)	AB
	QSõCN1630REZZ	Socket, 16 Pin (LC)	AE
FADE SWITCH CIRCUIT			
	DUNTK2118TA01	Fade Switch Circuit Board Ass'y	—
MISCELLANEOUS			
SW8001	QSW-K0069GEZZ	Switch, BLC	AC
SW8814	QSW-S0189GEZZ	Switch, Fade	AD
REMOTE CONTROL JACK CIRCUIT			
	DUNTK2120TA00	Remote Control Jack Circuit Board Ass'y	—
DIODE			
D8811	RH-DX0063GEZZ		AA

Ref. No.	Part No.	Description	Price Code
COIL			
L8803	RCi LP0071GEZZ	220μH	AB
RESISTORS			
R8831, 8840	VRD-SA2BB331J	Carbon, 330 ohm	AA
MISCELLANEOUS			
J8801	QJAKE0071GEZZ	Jack, Remote Control	AE
P34	QPLGN0353TAZZ	Plug, 3 Pin (GA)	AB
VTR S/S, DC JACK CIRCUIT			
	DUNTK2129TA00	VTR S/S, DC Jack Circuit Board Ass'y	—
DIODE			
D901	RH-DX0166TAZZ		AE
CAPACITOR			
C915	VCE9KM1VW105M	Electrolytic, (N.P), 35V, 1μF	AB
MISCELLANEOUS			
⚠F901	QFS-J2521GEZZ	Fuse, T2.5A	AE
J8901	QJAKC0008GEZZ	Jack, DC Input	AC
SW8822	QSW-K0064GEZZ	Switch, VTR S/S	AC
P35	QPLGN0454TAZZ	Plug, 4 Pin (EA)	AB
P36	QPLGN0321REZZ	Plug, 3 Pin (EB)	AA
P37	QPLGN0221REZZ	Plug, 2 Pin (EC)	AA
MIC JACK CIRCUIT			
	DUNTK2122TA00	Mic, Jack Circuit Board Ass'y	—
MISCELLANEOUS			
J8601	QJAKF0006GEZZ	Jack, Mic.	AE
SW8823	QSW-K0072GEZZ	Switch, Sub REC	AB
P64	QPLGN0353TAZZ	Plug, 3 Pin (NA)	AB
P65	QPLGN0253TAZZ	Plug, 2 Pin (NB)	AB
LI BATTERY CIRCUIT			
	DUNTK2121TA01	LI Battery Circuit Board Ass'y	—

Ref. No.	Part No.	Description	Price Code
DIODE			
D8810	RH-PX0150GEZZ		AB
CAPACITOR			
C654	VCEAKM0JW106M	Electrolytic, 6.3V, 10μF	AB
RESISTORS			
R650	VRD-SA2BB221J	Carbon, 220 ohm	AA
R8830	VRD-SA2BB391J	Carbon, 390 ohm	AA
MISCELLANEOUS			
J8602, 8603	QJAKA0002GEZZ	Jack, Earphone BGM	AD
SW8802	QSW-K0014CEZZ	Switch, Self Timer	AC
SW8803, 8804, 8805, 8820	QSW-K0068GEZZ	Switch, Time Core Send Set Reset	AC
P39, 41	QPLGN0353TAZZ	Plug, 3 Pin (HA) (HC)	AB
P40	QPLGN0653TAZZ	Plug, 6 Pin (HB)	AB
⚠	LHLDB1005GEZZ	LI Battery Holder	AG
MECHA DRIVE CIRCUIT			
	RUNTK0562GEN1	Mecha Drive Board Assembly	—
INTEGRATED CIRCUITS			
IC7701	VHi TA7262F/-1	Drum Motor Driver	AP
IC7702	VHi TA7745F/-1	Cap Motor Driver	AM
TRANSISTORS			
Q7701	VSDTC144EK/-1	Inverter	AB
Q7702	VS2SB766A-R1E	Signal Bias	AD
Q7705, 7706, 7707	VS2SA1213Y/-1	Cap U Coil Drive Cap V Coil Drive Cap W Coil Drive	AD
DIODES			
D7701, 7702	VHD1S2837//1E		AC
Q7703, 7704	RH-PX0122GEZZ		AG
CAPACITORS			
C7701, 7702, 7703, 7707, 7708, 7709	VCKYTV1HF473Z	Ceramic, 50V, 0.047μF	AB

Ref. No.	Part No.	Description	Price Code
C7704, 7705, 7706	VCSAPD1CJ155M	Tantalum, 16V, 1.5μF	AC
C7710, 7711, 7712	VCEAKM1CW226M	Electrolytic, 16V, 22μF	AB
RESISTORS			
R7701, 7702	VRS-TV1JD472J	Chip, 4.7k ohm	AA
R7703	VRS-TW3SF151J	Chip, 150 ohm	AB
R7705	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R7706, 7707	VRS-TV1JD102J	Chip, 1k ohm	AA
R7708	VRS-TV1JD331J	Chip, 330 ohm	AA
R7709	VRS-TV1JD103J	Chip, 10k ohm	AA
R7710	VRS-TV1JD391J	Chip, 390 ohm	AA
R7711, 7712, 7713	VRS-TV1JD392J	Chip, 3.9k ohm	AA
R7714, 7715, 7716	VRS-TV1JD561J	Chip, 560 ohm	AA
MISCELLANEOUS			
P55	QSōCN1436TAZZ	Socket, 14 Pin	AE
P56	QPLGN1419REZZ	Plug, 14 Pin	AC
P57, 58, 59	QPLGN0221REZZ	Plug, 2 Pin	AA
S23	QSōCN2203REZZ	Socket, 22 Pin	AE
SENSOR CIRCUIT			
	DUNTK2183PM00 or RUNTK0204TAN1	Sensor Circuit Board Ass'y	— —
INTEGRATED CIRCUITS			
IC101	VHiLZ92E62B-1	CCD Drive Timing	AW
IC103	VHiLR36682/-1	CCD Driver	AS
IC105	VHiiR3P66//-1	Sample Hold	AG
IC106	VHiAN79L08/-1	−8V Regulator	AE
TRANSISTORS			
Q107	VSXN4601///-1	−7V Regulator	AB
Q108, 109, 110, 113	VS2SD1819A/-1	+14V Regulator OFD Regulator +5V Regulator +2V Regulator	AB
Q111, 115, 118	VS2SC1623L51E	Buffer	AB
DIODES			
D103	VHD1SS123//-1		AC
D104	VHD1S2837//1E		AC
D105	VHDMA151K//-1		AB
COILS			
L101	VP-1M100K1R6N	10μH	AC
L103, 111	VP-1M680K6R9N	68μH	AC
L104, 105, 106	VP-1M1R0MR50N	1μH	AC
L107	VP-1MR68MR46N	0.68μH	AC
L108, 109, 110	VP-1MR68KR46N	0.68μH	AC
FILTER			
FL101	RCiLi0306TAZZ		AF
CRYSTAL OSCILLATOR			
X101	RCRSB0119CEZZ		AG
CONTROL			
R116	RVR-M7803TAZZ	47k ohm, OFD	AC
CAPACITORS			
C101, 123, 127, 129, 131, 132, 135, 137, 140, 143, 145, 166, 171, 174, 175, 179	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C102, 126, 144, 148, 170	VCEAEG1CW106M	Electrolytic, 16V, 10μF	AB
C103, 128	RC-EZ0139TAZZ	Electrolytic, 6.3V, 47μF	AB
C104, 158	VCKYTV1HB103K	Ceramic, 50V, 0.01μF	AA
C105	RTō-H0034TAZZ	Trimmer	AD
C106	VCCCTV1HH5R0C	Ceramic, 50V, 5pF	AA
C107	VCCCTV1HH3R0C	Ceramic, 50V, 3pF	AA
C121	VCEAEG1VW475M	Electrolytic, 35V, 4.7μF	AB
C122, 142, 165	VCSAPD1CJ105M	Tantalum, 16V, 1μF	AC

Ref. No.	Part No.	Description	Price Code
C124, 125, 134	RC-EZ0182TAZZ	Electrolytic, 25V, 10μF	AB
C130, 133, 147, 149, 177	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C136	VCSAPD1DJ684M	Tantalum, 20V, 0.68μF	AC
C139	VCEAEG1EW336M	Electrolytic, 25V, 33μF	AB
C146, 176	VCSATG0JE476K	Tantalum, 6.3V, 47μF	AC
C150, 151, 152, 153, 154, 167, 181	VCKYTV1HB102K	Ceramic, 50V, 1000pF	AA
C155, 156	VCCCTV1HH220J	Ceramic, 50V, 22pF	AA
C157, 159, 160, 168	VCCCTV1HH470J	Ceramic, 50V, 47pF	AA
C164	VCEAEG0JW226M	Electrolytic, 6.3V, 22μF	AB
C169, 180	VCCCTV1HH100D	Ceramic, 50V, 10pF	AA
C172	VCCCTV1HH8R0D	Ceramic, 50V, 8pF	AA
C173	VCCCTV1HH270J	Ceramic, 50V, 27pF	AA

RESISTORS

R101, 169	VRS-TV1JD000J	Chip, 0 ohm	AA
R105, 149	VRS-TV1JD105J	Chip, 1Meg ohm	AA
R106, 136, 137, 138, 139, 150, 151	VRS-TV1JD101J	Chip, 100 ohm	AA
R109	VRS-TV1JD272J	Chip, 2.7k ohm	AA
R110, 112, 122	VRS-TV1JD123F	Chip, 12k ohm	AA
R111, 114, 148	VRS-TV1JD100J	Chip, 10 ohm	AA
R113	VRS-TV1JD333F	Chip, 33k ohm	AA
R115, 124, 127	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R117	VRS-TV1JD103J	Chip, 10k ohm	AA
R118	VRS-TV1JD473J	Chip, 47k ohm	AA
R119	VRS-TV1JD912J	Chip, 9.1k ohm	AA
R120, 142	VRS-TV1JD104J	Chip, 100k ohm	AA
R121	VRS-TV1JD332F	Chip, 3.3k ohm	AA
R123	VRS-TV1JD153F	Chip, 15k ohm	AA
R125, 129, 130	VRS-TV1JD330J	Chip, 33 ohm	AA
R126	VRS-TV1JD133F	Chip, 13k ohm	AA
R128	VRS-TV1JD220J	Chip, 22 ohm	AA
R131	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R132, 164	VRS-TV1JD472J	Chip, 4.7k ohm	AA
R135, 167	VRS-TV1JD102J	Chip, 1k ohm	AA
R141	VRS-TV1JD221J	Chip, 220 ohm	AA
R145	VRS-TV1JD391J	Chip, 390 ohm	AA
R146	VRS-TV1JD203F	Chip, 20k ohm	AA
R147	VRS-TV1JD223F	Chip, 22k ohm	AA
R152	VRS-TV1JD561J	Chip, 560 ohm	AA
R157	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R160	VRS-TV1JD820J	Chip, 82 ohm	AA
R161	VRS-TV1JD181J	Chip, 180 ohm	AA
R165	VRS-TV1JD182F	Chip, 1.8k ohm	AA
R166	VRS-TV1JD471J	Chip, 470 ohm	AA
R168	VRS-TV1JD681J	Chip, 680 ohm	AA

MISCELLANEOUS

S101	QSõCN0858CEZZ	Socket, 8 Pin	AA
S102	QSõCN1058CEZZ	Socket, 10 Pin	AA
TP101, 104, 106, 107, 114	QLUGP0109GEFW	Test Pin	AA
TP115	QLUGP0109TAFW	Test Pin	AA

SSG/POWER ZOOM CIRCUIT

	DUNTK2186PM00 or RUNTK0207TAN1	SSG/Power Zoom Circuit Board Ass'y	—

INTEGRATED CIRCUITS

IC001	VHiNJM2904M-1	Amp.	AE
IC501	VHiLZ92E60/-1	Sync. Signal Generator	AV
IC502	VHiTC4S69F/-1	FH/2 Inverter	AC

TRANSISTORS

Q001, 002	VSXN4601///-1	Power Zoom Driver	AB
Q501, 505	VS2SK94-X3/-1	Amp. Buffer	AC
Q502	VSXN6501///-1	Phase Locked Loop Amp.	AB
Q503, 504	VS2SC2462-C-1	Buffer	AB
Q902	VS2SD874AS/-1	+9V Regulator	AC
Q903	VS2SB710RS/-1	A/F Switching	AB
Q904	VSDTC144EK/-1	A/F Switching	AB

COILS

L501, 502, 503	VP-1M470K5R4N	47μH	AC

Ref. No.	Part No.	Description	Price Code
CRYSTAL OSCILLATOR			
X501	RCRSZ0012CEZZ or RCRSZ0013CEZZ		AV AU
CAPACITORS			
C001	VCSAPB1CJ106M	Tantalum, 16V, 10μF	AE
C002	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C501	VCKYTQ1EF104Z	Ceramic, 25V, 0.1μF	AB
C502	VCKYTQ1CR104K	Ceramic, 16V, 0.1μF	AB
C503, 507, 511, 515, 516, 517, 518	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C504	VCEAEG1CW106M	Electrolytic, 16V, 10μF	AB
C505	RC-EZ0139TAZZ	Electrolytic, 6.3V, 47μF	AB
C506	VCCCTV1HH220J	Ceramic, 50V, 22pF	AA
C508, 509	VCCCTV1HH560J	Ceramic, 50V, 56pF	AA
C510	VCCCTV1HH471J	Ceramic, 50V, 470pF	AA
C512	VCEAEG0JW476M	Electrolytic, 6.3V, 47μF	AB
C513, 514	VCCCTV1HH100D	Ceramic, 50V, 10pF	AA
C904	VCEAEG1CW226M	Electrolytic, 16V, 22μF	AB
RESISTORS			
R001, 002, 518	VRS-TV1JD153J	Chip, 15k ohm	AA
R003, 006, 541	VRS-TV1JD274J	Chip, 270k ohm	AA
R004, 521	VRS-TV1JD122J	Chip, 1.2k ohm	AA
R005, 501	VRS-TV1JD273J	Chip, 27k ohm	AA
R007, 011	VRS-TV1JD682J	Chip, 6.8k ohm	AA
R008, 014, 015, 506, 507, 519, 525, 909	VRS-TV1JD103J	Chip, 10k ohm	AA
R009, 010	VRS-TV1JD223J	Chip, 22k ohm	AA
R012, 509, 534	VRS-TV1JD221J	Chip, 220 ohm	AA
R013	VRS-TV1JD3R9J	Chip, 3.9 ohm	AA
R502, 503	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R505, 910	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R508, 516	VRS-TV1JD473J	Chip, 47k ohm	AA
R510, 515	VRS-TV1JD822J	Chip, 8.2k ohm	AA
R511	VRS-TV1JD912J	Chip, 9.1k ohm	AA
R512, 513	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R514	VRS-TV1JD133J	Chip, 13k ohm	AA
R517	VRS-TV1JD752J	Chip, 7.5k ohm	AA
R520	VRS-TV1JD563J	Chip, 56k ohm	AA
R522, 532	VRS-TV1JD102J	Chip, 1k ohm	AA
R523	VRS-TV1JD392J	Chip, 3.9k ohm	AA
R524, 526, 527, 528, 529, 530, 531, 540, 901	VRS-TV1JD101J	Chip, 100 ohm	AA
R533	VRS-TV1JD821J	Chip, 820 ohm	AA
R902	VRS-TV1JD104J	Chip, 100k ohm	AA
R908	VRS-TV1JD2R2J	Chip, 2.2 ohm	AA
MISCELLANEOUS			
P001	QPLGN0444TAZZ	Plug, 4 Pin	AB
P002	QPLGN0321REZZ	Plug, 3 Pin	AA
P901	QPLGN0720REZZ	Plug, 7 Pin	AB
S501	QSOCN1058CEZZ	Socket, 10 Pin	AA
TP501, 502	QLUGP0109GEFW	Test Pin	AA
ENCORDER CIRCUIT			
	DUNTK2185PM00 or RUNTK0206TAN1	Encorder Circuit Board Ass'y	— —
INTEGRATED CIRCUITS			
IC401	VHiAN2251S/-1	Encorder	AW
IC403	VHiNJM2904M-1	Amp.	AE
IC405	VHiMSM6819M-1	CCD Delay	AW
TRANSISTORS			
Q401, 415, 421, 422, 474	VS2SD1819A/-1	Pulse Amp. Buffer Fade Color Gain Control	AB
Q402, 403, 404, 419	VS2SB1218A/-1	Buffer Mix Buffer Buffer HLC Suppressor Level	AA
Q405	VS2SK209BL/-1	HLC Suppressor Switching	AD
Q406, 420, 470	VSXN6501///-1	4.43MHz BPF Mix Amp. WHD Switchig	AB
Q407, 416, 418, 423, 472	VSXN4601///-1	WHD Gate/Buffer Clamp Knee Buffer	AB

Ref. No.	Part No.	Description	Price Code
Q471	VS2SK94-X3/-1	C-Phase Swtichin	AC
Q473	VSXN6401///-1	Fade Color Gain Control	AB
DIODES			
D401	VHDMA151K//-1		AB
D402	VHDHSM88AS/-1		AC
COILS			
L401	VP-1M220K2R9N	22μH	AC
L402, 470	VP-1M330K4R2N	33μH	AC
L404	VP-1M820K7R7N	82μH	AC
L405, 406, 407, 471	VP-1M470K5R4N	47μH	AC
FILTERS			
FL401	RCiLF0161TAZZ		AH
FL402	RCiLF0173TAZZ		AH
CONTROLS			
R405, 414, 423, 425, 433	RVR-M7801TAZZ	22k ohm, Burst Phase Set Up B-Y Gain R-Y Gain H.L. Killer	AC
R407, 409, 495, 568	RVR-M7799TAZZ	10k ohm, B-Y C/B R-Y C/B B-Y FH/2 OFF Set H.L.C. Sup	AC
R583	RVR-M7797TAZZ	4.7k ohm, VE-Balance	AC
CAPACITORS			
C401, 402, 403, 404, 405, 411, 412, 414, 417, 418, 421, 422, 434, 454, 455, 458, 459, 460, 462, 465	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C406, 407, 408, 413	VCKYTQ1HB473K	Ceramic, 50V, 0.047μ	AB
C409, 448, 461, 466	VCEAKG0JW476M	Electrolytic, 6.3V, 47μF	AB
C410	VCSAPD1AJ105M	Tantalum, 10V, 1μF	AD
C415, 416, 419	VCKYTV1HF473Z	Ceramic, 50V, 0.047μF	AB
C420	VCSAPK0JJ476M	Tantalum, 6.3V, 47μF	AD
C423	VCEAKG1HW105M	Electrolytic, 50V, 1μF	AB
C424, 474	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C425, 431, 450, 453, 464, 475	VCEAKG0JW106M	Electrolytic, 6.3V, 10μF	AB
C428, 429, 451	VCKYTV1EB223K	Cermaic, 25V, 0.022μF	AB
C430	VCCCTV1HH390J	Ceramic, 50V, 39pF	AA
C432, 435, 449	VCKYTQ1CR104K	Ceramic, 16V, 0.1μF	AB
C433	VCCCTV1HH820J	Ceramic, 50V, 82pF	AA
C452	VCCCTV1HH680J	Ceramic, 50V, 68pF	AA
C456	VCEAKG1CW475M	Electrolytic, 16V, 4.7μF	AB
C457	VCEAKG1HW334M	Electrolytic, 50V, 0.33μF	AB
C463	VCEAKG1AW476M	Electrolytic, 10V, 47μF	AB
C469	VCCCTV1HH470J	Ceramic, 50V, 47pF	AA
C470	VCCCTV1HH150J	Ceramic, 50V, 15pF	AA
C471, 473	RTō-H0026TAZZ	Trimmer	AD
C472	VCCCTV1HH681J	Ceramic, 50V, 680pF	AB
C476	VCEAKG1CW106M	Electrolytic, 16V, 10μF	AB
RESISTORS			
R401, 404, 415, 446	VRS-TV1JD183J	Chip, 18k ohm	AA
R402, 445, 448, 570, 584, 585	VRS-TV1JD333J	Chip, 33k ohm	AA
R403, 419	VRS-TV1JD273J	Chip, 27k ohm	AA
R406, 408, 411, 438, 459, 478, 486, 496, 576, 577, 578, 580	VRS-TV1JD102J	Chip, 1k ohm	AA

Ref. No.	Part No.	Description	Price Code
R410, 455, 497, 575	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R412, 431, 499	VRS-TV1JD153J	Chip, 15k ohm	AA
R413, 428, 473, 474, 475, 476, 477, 482, 551, 567, 573	VRS-TV1JD103J	Chip, 10k ohm	AA
R416, 437, 491, 492, 557	VRS-TV1JD123J	Chip, 12k ohm	AA
R417	VRS-TV1JD562J	Chip, 5.6k ohm	AA
R418, 479, 481, 555, 563	VRS-TV1JD272J	Chip, 2.7k ohm	AA
R421, 424, 432, 434, 443, 590	VRS-TV1JD000J	Chip, 0 ohm	AA
R426, 462, 466, 467, 468, 469	VRS-TV1JD104J	Chip, 100k ohm	AA
R427, 561, 572	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R429, 566, 569	VRS-TV1JD682J	Chip, 6.8k ohm	AA
R430, 436, 461, 571, 574	VRS-TV1JD223J	Chip, 22k ohm	AA
R435	VRS-TV1JD273F	Chip, 27k ohm	AA
R439	VRS-TV1JD393J	Chip, 39k ohm	AA
R440, 441	VRS-TV1JD133J	Chip, 13k ohm	AA
R442, 556	VRS-TV1JD822J	Chip, 8.2k ohm	AA
R444	VRS-TV1JD683J	Chip, 68k ohm	AA
R447	VRS-TV1JD163J	Chip, 16k ohm	AA
R451	VRS-TV1JD102F	Chip, 1k ohm	AA
R452	VRS-TV1JD821F	Chip, 820 ohm	AA
R453, 465, 588	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R454	VRS-TV1JD511J	Chip, 510 ohm	AA
R456	VRS-TV1JD331J	Chip, 330 ohm	AA
R457	VRS-TV1JD911J	Chip, 910 ohm	AA
R458, 480, 581, 582, 587	VRS-TV1JD122J	Chip, 1.2k ohm	AA
R460, 558	VRS-TV1JD182J	Chip, 1.8k ohm	AA
R463, 464	VRS-TV1JD154J	Chip, 150k ohm	AA
R470, 591	VRS-TV1JD105J	Chip, 1Meg ohm	AA
R471, 472	VRS-TV1JD121J	Chip, 120 ohm	AA
R483, 484	VRS-TV1JD680J	Chip, 68 ohm	AA
R490	VRS-TV1JD392J	Chip, 3.9k ohm	AA
R498	VRS-TV1JD151J	Chip, 150 ohm	AA
R552	VRS-TV1JD622F	Chip, 6.2k ohm	AA
R553	VRS-TV1JD182F	Chip, 1.8k ohm	AA
R554	VRS-TV1JD822F	Chip, 8.2k ohm	AA
R560	VRS-TV1JD821J	Chip, 820 ohm	AA
R562	VRS-TV1JD101J	Chip, 100 ohm	AA
R564	VRS-TV1JD682F	Chip, 6.8k ohm	AA
R565	VRS-TV1JD912F	Chip, 9.1k ohm	AA
R579	VRS-TV1JD221J	Chip, 220 ohm	AA
R586	VRS-TV1JD391J	Chip, 390 ohm	AA
R596	VRS-TV1JD332F	Chip, 3.3k ohm	AA

MISCELLANEOUS

TP401, | 408	QLUGP0109GEFW	Test Pin	AA

SIGNAL PROCESS/AUTO WHITE CIRCUIT

	DUNTK2184PM00 or RUNKT0205TAN1	Signal Process/Auto White Circuit Board Ass'y	— —

INTEGRATED CIRCUITS

IC201	VHi AN2151S/-1	Signal Process	AU
IC202	VHi AN2351S/-1	Signal Process	AW
IC301, 303	VHi NJM2902M-1	Amp.	AF
IC302	VHi NJU4052M-1	Analog Switching	AE
IC376, 377	VHi MSM6819M-1	1H CCD Delay	AW
IC601	VHi NJM3415M-1	Amp.	AT
IC901	RH-iZ0092TAZZ	+5V Regulator	AM

TRANSISTORS

Q201	VSXN6401///-1	Clamper. Switching	AB
Q202, 203	VSDTC124EK/-1	Switching	AB
Q204	VSDTA144EK/-1	Switching	AC
Q206, 207, 382	VSXN1501///-1	Comparator Limitter	AB

Ref. No.	Part No.	Description	Price Code
Q208, 212, 213, 214, 376, 378, 381	VS2SC1623L51E	Clamp Buffer Sub Amp.	AB
Q209, 210, 215, 383, 384, 601, 602	VSXN4601///-1	Buffer Amp. Buffer Limitter Gate ALC Detector	AB
Q211, 377, 379, 380	VS2SA812-M51E	Buffer	AC
Q216, 301, 303, 304	VSXN6501///-1	Mix Amp. Low Light Switching Low Light Detector Limitter Low Level	AB
Q217	VS2SD1819A/-1	Buffer	AB
Q305	VS2SB1218A/-1	Limitter High Level	AA
DIODES			
D201, 202	VHDMA151WA/-1		AB
D203	VHDMA151K//-1		AB
D301, 302, 303	VHDMA143///-1		AB
THERMISTOR			
TH201	VHH5KD-5///1A		AB
COILS			
L201, 204, 374, 375	VP-1M220K2R9N	22μH	AC
L202, 376, 377	VP-1M470K5R4N	47μH	AC
L203	VP-1M330K4R2N	33μH	AC
L205	VP-1M100K1R6N	10μH	AC
FILTERS			
FL201	RCiLi0305TAZZ		AF
FL202	RCiLF0164TAZZ		AL
FL203	RCiLF0158TAZZ		AL
FL204	RCiLF0159TAZZ		AH
FL205	RCiLF0185TAZZ		AF
FL376, 377	RCiLF0186TAZZ		AF
CONTROLS			
R203, 359,	RVR-M7799TAZZ	10k ohm, AGC L/L Set	AC
377, 380		C-Balance Suppress Balance	
R221	RVR-M7803TAZZ	47k ohm, L-Clip	AC
R267, 277, 309, 325, 330, 333	RVR-M7801TAZZ	22k ohm, R-Indoor B-Indoor A/W R-OFF A/W B-OFF A/W R-Gain A/W B-Gain	AC
R283	RVR-M7805TAZZ	100k ohm, FM/2 OFF Set	AC
R343, 345	RVR-M7456TAZZ	4.7k ohm, R-FL B-FL	AE
R347, 349	RVR-M7797TAZZ	4.7k ohm, R-Out B-Out	AC
R617	RVR-M7793TAZZ	1k ohm, IRIS	AC
CAPACITORS			
C202	VCSATG1VE224K	Tantalum, 35V, 0.22μF	AC
C203, 204, 208, 217, 219, 222, 231, 247, 311, 312, 380, 382, 388, 390, 396, 606	VCKYTV1HF103Z	Ceramic, 50V, 0.01μF	AA
C205, 215	VCEAKG0JW226M	Electrolytic, 6.3V, 22μF	AB
C206, 210	VCKYTV1HF473Z	Ceramic, 50V, 0.047μF	AB
C207, 237, 238, 239, 246, 250, 251, 252, 304, 305, 395, 603	VCKYTV1EF104Z	Ceramic, 25V, 0.1μF	AB
C209, 232, 242, 255, 313, 314, 381, 389, 394, 602, 901	VCEAKG0JW476M	Electrolytic, 6.3V, 47μF	AB
C211, 605	VCKYTQ1CF105Z	Ceramic, 16V, 1μF	AC
C212	VCCCTV1HH270J	Ceramic, 50V, 27pF	AA

Ref. No.	Part No.	Description	Price Code
C213, 214, 378, 379, 386, 387	VCKYTV1HB103K	Ceramic, 50V, 0.01μF	AA
C216	VCEAKG1HW105M	Electrolytic, 50V, 1μF	AB
C218, 248	VCSATG0JE476K	Tantalum, 6.3V, 47μF	AC
C220, 221	VCCCTV1HH100D	Ceramic, 50V, 10pF	AA
C224, 228	VCCCTV1HH470J	Ceramic, 50V, 47pF	AA
C225, 233, 234	VCKYTQ1CR104K	Ceramic, 16V, 0.1μF	AB
C226, 227, 392, 609	VCEAKG1CW106M	Electrolytic, 16V, 10μF	AB
C235, 236, 241, 243, 244, 245, 249, 374, 375	VCCCTV1HH120J	Ceramic, 50V, 12pF	AA
C240	VCCCTV1HH680J	Ceramic, 50V, 68pF	AA
C253, 254	VCKYTQ1HB473K	Ceramic, 50V, 0.047μF	AB
C256	VCCCTV1HH101J	Ceramic, 50V, 100pF	AA
C301, 302, 303	VCKYTV1HB821K	Ceramic, 50V, 820pF	AA
C306, 307	VCEAKG0JW106M	Electrolytic, 6.3V, 10μF	AB
C308, 309	VCSAPD1AJ105M	Tantalum, 10V, 1μF	AD
C310	VCSAPD0JJ335M	Tantalum, 6.3V, 3.3μF	AC
C376, 384	VCEAKG1CW475M	Electrolytic, 16V, 4.7μF	AB
C377, 385	VCE9LU1HW334M	Electrolytic (N.P), 50V, 0.33μF	AB
C383, 391	VCEAKG1AW476M	Electrolytic, 10V, 47μF	AB
C393	RC-EZ0150TAZZ	Electrolytic, 6.3V, 100μF	AB
C601	VCCCTV1HH180J	Ceramic, 50V, 18pF	AA
C604	VCSAPD1CJ105M	Tantalum, 16V, 1μF	AC
C608	VCSATG1CE226K	Tantalum, 16V, 22μF	AC

RESISTORS

R201	VRS-TV1JD820J	Chip, 82 ohm	AA
R202, 242, 250, 329, 331, 332, 334, 346, 348	VRS-TV1JD472J	Chip, 4.7k ohm	AA
R204	VRS-TV1JD393J	Chip, 39k ohm	AA
R205, 220, 241, 253, 259, 263, 299, 319, 386, 389, 394, 607, 616	VRS-TV1JD103J	Chip, 10k ohm	AA
R206	VRS-TV1JD100J	Chip, 10 ohm	AA
R207	VRS-TV1JD203J	Chip, 20k ohm	AA
R208	VRS-TV1JD561J	Chip, 560 ohm	AA
R209, 213, 214, 268, 276, 354, 355, 356, 362, 372, 601, 625	VRS-TV1JD104J	Chip, 100k ohm	AA
R210, 223, 231, 232, 233, 236, 237, 240, 245, 247, 256, 286, 288, 293, 294, 296, 339, 341, 374, 375, 376, 379, 388, 395, 396, 606	VRS-TV1JD102J	Chip, 1k ohm	AA
R211, 222	VRS-TV1JD822J	Chip, 8.2k ohm	AA
R212	VRS-TV1JD474J	Chip, 470k ohm	AA
R215, 258, 323, 366	VRS-TV1JD223J	Chip, 22k ohm	AA
R216, 219, 248, 271	VRS-TV1JD823J	Chip, 82k ohm	AA
R217, 338, 340	VRS-TV1JD473J	Chip, 47k ohm	AA
R218, 358, 615	VRS-TV1JD153J	Chip, 15k ohm	AA

Ref. No.	Part No.	Description	Price Code
R234, 327, 328, 357	VRS-TV1JD332J	Chip, 3.3k ohm	AA
R235, 238, 239, 255, 261, 278, 285, 292, 298, 365, 378, 381, 382, 613	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R243, 275, 316, 317, 326, 360, 390, 393, 397, 602, 603, 624	VRS-TV1JD562J	Chip, 5.6k ohm	AA
R244, 352, 367	VRS-TV1JD182J	Chip, 1.8k ohm	AA
R249, 257, 270, 310, 321, 324, 385, 398, 604	VRS-TV1JD333J	Chip, 33k ohm	AA
R251	VRS-TV1JD471J	Chip, 470 ohm	AA
R252	VRS-TV1JD132J	Chip, 1.3k ohm	AA
R260	VRS-TV1JD151J	Chip, 150 ohm	AA
R264	VRS-TV1JD303J	Chip, 30k ohm	AA
R269, 272	VRS-TV1JD183J	Chip, 18k ohm	AA
R273	VRS-TV1JD564J	Chip, 560k ohm	AA
R274	VRS-TV1JD125J	Chip, 1.2Meg ohm	AA
R281, 350, 618, 619, 623	VRS-TV1JD123J	Chip, 12k ohm	AA
R284, 361, 371, 614	VRS-TV1JD273J	Chip, 27k ohm	AA
R287	VRS-TV1JD334J	Chip, 330k ohm	AA
R289	VRS-TV1JD331J	Chip, 330 ohm	AA
R290	VRS-TV1JD152J	Chip, 1.5k ohm	AA
R291, 314, 383, 391	VRS-TV1JD101J	Chip, 100 ohm	AA
R295	VRS-TV1JD911J	Chip, 910 ohm	AA
R297	VRS-TV1JD511J	Chip, 510 ohm	AA
R301, 303, 306, 307	VRS-TV1JD103F	Chip, 10k ohm	AA
R302, 304, 305, 308	VRS-TV1JD104F	Chip, 100k ohm	AA
R311, 320, 351	VRS-TV1JD682J	Chip, 6.8k ohm	AA
R312	VRS-TV1JD105J	Chip, 1Meg ohm	AA
R313	VRS-TV1JD563J	Chip, 56k ohm	AA
R315	VRS-TV1JD394J	Chip, 390k ohm	AA
R322	VRS-TV1JD124J	Chip, 120k ohm	AA
R342, 344	VRS-TV1JD392J	Chip, 3.9k ohm	AA
R353, 363, 364	VRS-TV1JD272J	Chip, 2.7k ohm	AA
R368	VRS-TV1JD330J	Chip, 33 ohm	AA
R369	VRS-TV1JD824J	Chip, 820k ohm	AA
R370	VRS-TV1JD274J	Chip, 270k ohm	AA
R384	VRS-TV1JD391J	Chip, 390 ohm	AA
R387	VRS-TV1JD122J	Chip, 1.2k ohm	AA
R392	VRS-TV1JD271J	Chip, 270 ohm	AA
R605	VRS-TV1JD683J	Chip, 68k ohm	AA
R608	VRS-TV1JD225J	Chip, 2.2Meg ohm	AA

MISCELLANEOUS

P301	QPLGN0721REZZ	Plug, 7 Pin	AB
P601	QPLGN0444TAZZ	Plug, 4 Pin	AB
S201	QSöCN0829TAZZ	Socket, 8 Pin	AD
TP201, 202, 203, 204, 303, 371, 376	QLUGP0109GEFW	Test Pin	AA

VIEWFINDER CIRCUIT

	90APNP3036HAAP	Viewfinder Circuit Board Ass'y	—

INTEGRATED CIRCUIT

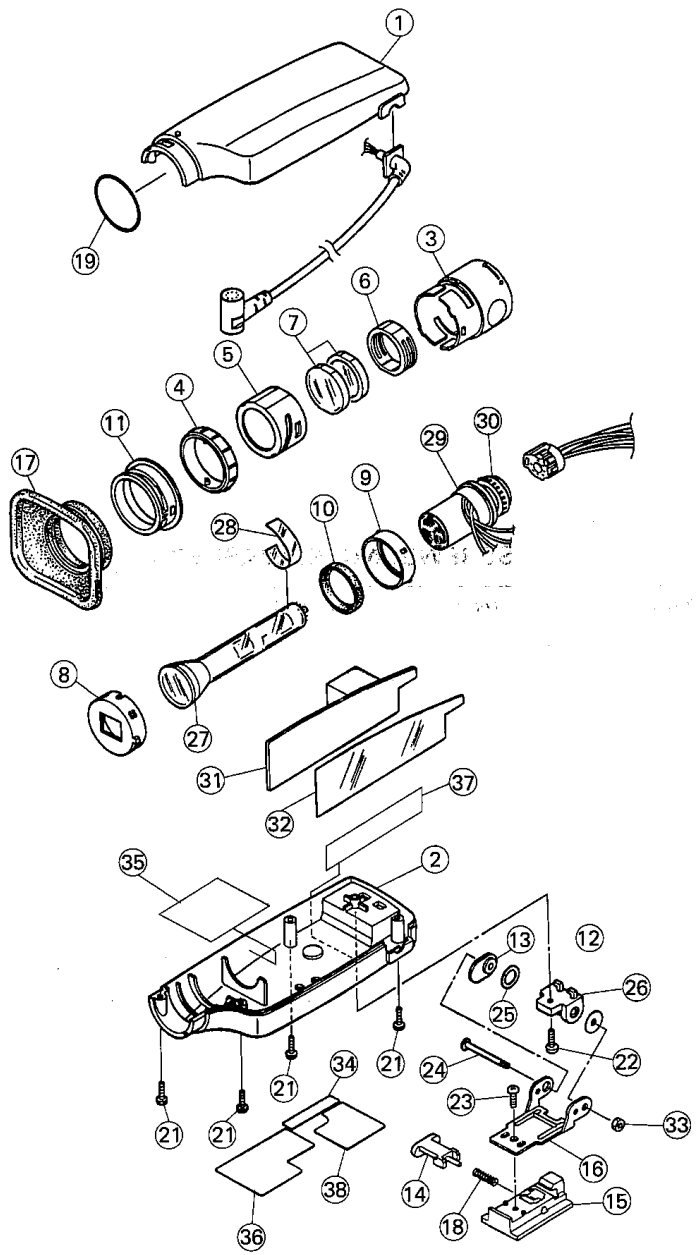
IC01	90AAN2514S	Sync. SEPA, H, V-Osc., Video Amp., V-Output, H-Drive	AQ

TRANSISTORS

Q01, 03	90A2SA1163BL	Video Amp.	AC
Q02	90A2SD1898T100	Hori. Output	AD

Ref. No.	Part No.	Description	Price Code
DIODES			
D01	90AERA22-10		AE
D02	90AMA152WA		AC
D04	90AMA77		AC
TH01	90A112501-2	Thermistor, 500 ohm	AE
COILS			
L01	90APLH83003601	Linearity Coil	AE
⚠L03	90AKY1041S	DY	AX
TRANSFORMER			
⚠T01	90AKF7341M	F,B,T	AY
CONTROLS			
VR01	90AEVM6NSX0BQ4	47k ohm, H. Free-Run Osc.	AE
VR02	90AEVM6PSX0BQ2	470 ohm, V-Size	AE
VR03	90AVG67TH1B1	1M ohm, Brightness	AC
VR04	90AVG67TH1B2R2	2.2M ohm, Focus	AC
CAPACITORS			
C01, 15	90AECEA0JK221	Electrolytic, 6.3V, 220μF	AC
C02	90AECEV1HA010R	Electrolytic, 50V, 1μF	AC
C03	90AGRM40B223K	Ceramic, 50V, 0.022μF	AB
C04	90AECSF0JE476	Tantalum, 6.3V, 47μF	AF
C05	90AECUV1E224Z	Ceramic, 25V, 0.22μF	AC
C06	90AECST1VY104K	Tantalum, 35V, 0.1μF	AC
C07	90AECUV1H680JN	Ceramic, 50V, 68pF	AB
C09	90AECEA1CKF470	Electrolytic, 16V, 47μF	AC
C10, 11	90AMCH315C683K	Ceramic, 50V, 0.068μF	AC
C12	90ADD8B152K500	Ceramic, 500V, 1500pF	AB
C13	90AECEA2AU4R7	Electrolytic, 100V, 4.7μF	AC
C14	90ADE95B152K1K	Ceramic, 1kV, 1500pF	AC
C18	90AECUV1H121JN	Ceramic, 50V, 120pF	AA
⚠C19	90AAMZ100J103	Metallized Polypro, 100V, 0.01μF	AC
C20	90AECEA1CKK100	Electrolytic, 16V, 10μF	AB
RESISTORS			
JP01, 02, 04, 05	VRS-TV1JD000J	Chip, 0 ohm	AA
R01	VRS-TV1JD104J	Chip, 100k ohm	AA
R02	VRS-TV1JD105J	Chip, 1M ohm	AA
R03	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R05	VRS-TV1JD433F	Chip, 43k ohm	AA
	or		
	VRS-TV1JD393F	Chip, 39k ohm	AA
	or		
	VRS-TV1JD473F	Chip, 47k ohm	AA
R06	VRS-TV1JD182J	Chip, 1.8k ohm	AA
R07	VRS-TV1JD101J	Chip, 100 ohm	AA
R09	VRS-TV1JD3R9J	Chip, 3.9 ohm	AA
R10, 14	VRS-TV1JD561J	Chip, 560 ohm	AA
R11, ⚠ 22	VRS-TV1JD222J	Chip, 2.2k ohm	AA
R12	VRS-TV1JD562J	Chip, 5.6k ohm	AA
R13	VRS-TV1JD273J	Chip, 27k ohm	AA
R16	VRS-TV1JD224J	Chip, 220k ohm	AA
R17, 18, 20, 21	VRS-TV1JD105J	Chip, 1M ohm	AA
R19	VRS-TV1JD125J	Chip, 1.2M ohm	AA
R23	VRS-TV1JD330J	Chip, 33 ohm	AA
R24	VRS-TV1JD471J	Chip, 470 ohm	AA
R26	VRS-TV1JD271J	Chip, 270 ohm	AA
R30	VRS-TV1JD564J	Chip, 560k ohm	AA
MISCELLANEOUS			
	90APWV833601NH	Viewfinder Cable	AT
P03, 04	90AiLY2PS15T2	DY Connector	AB
⚠LT01	90AELEH121KASY	Temperature Fuse Ass'y	AL

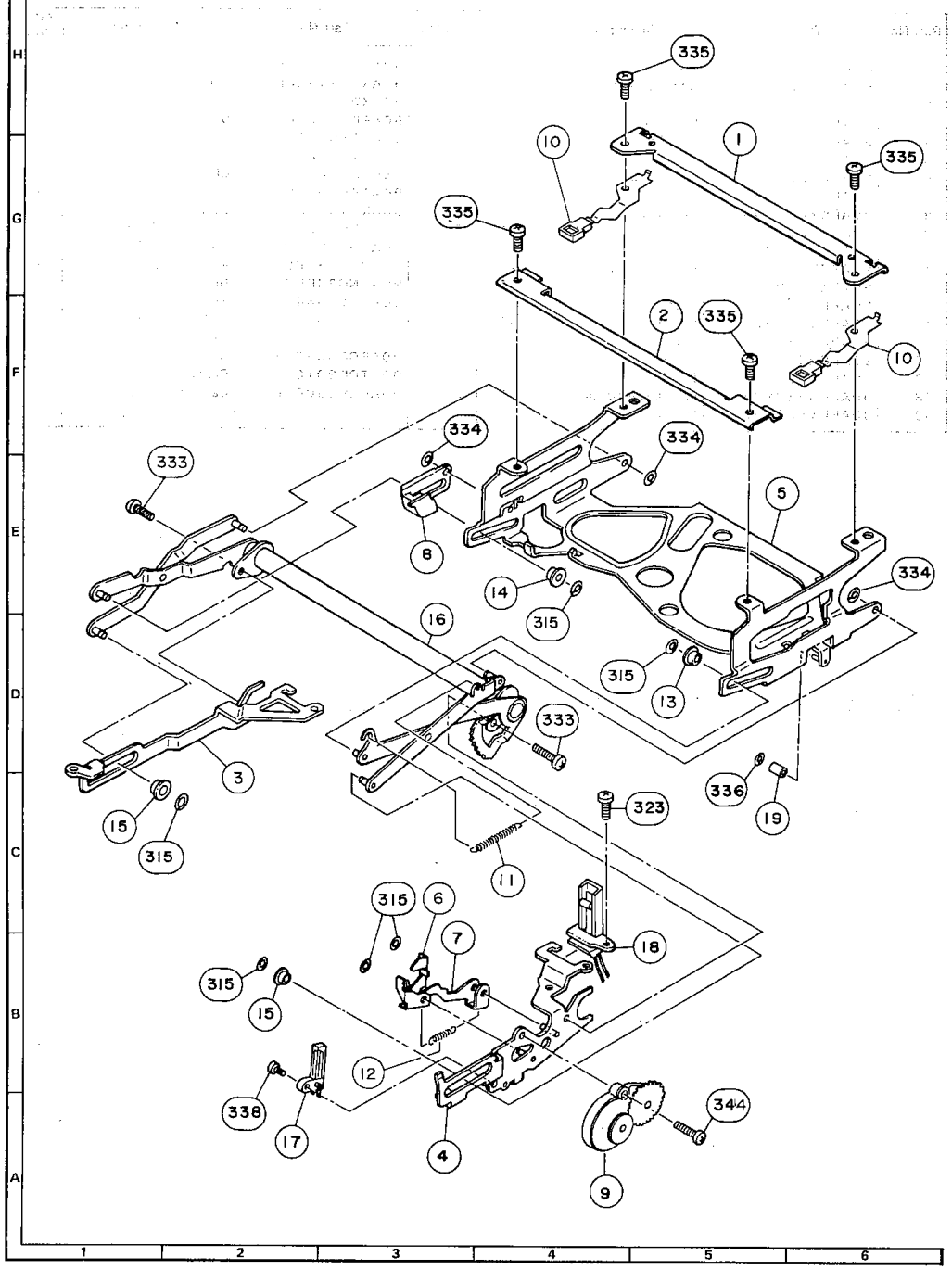
VIEWFINDER PARTS



VIEWFINDER PARTS

Ref. No.	Part No.	Description	Price Code	Ref. No.	Part No.	Description	Price Code
	KSETM0023TAZZ	Viewfinder Ass'y	BT	21	90AXδ17+55CFZ	Screw	AB
1	90APKY833601Z	Upper Cabinet	AG	22	90AXTN23+8CFZ	Screw	AA
2	90APKY833602Z	Bottom Cabinet	AG	23	90AXWN26+6CFZ	Screw	AB
3	90APKY833603	Lens Holder	AD	24	90APKR833603	Screw	AB
4	90APKY833604	Lens Ring	AC	25	90ASTW65-025	Polyslider	AB
5	90APKY832804	Lens Case	AC	26	90ASTW25-90-25	Polyslider	AB
6	90APKY832806	Lens Retaining Ring	AC	⚠27	VB01JVV47WB#N	CRT	BK
7	90APKY830107	Lens	AG	28	90AT4F90110	Tape	AB
8	90APKY831803	CRT Mask	AC	⚠29	90AKY1041S	D.Y.	AX
9	90APKY831804	CRT Holder	AC	30	90APMF772283-7	D.Y. Retaining Ring	AC
10	90APKM832202	CRT Rubber	AC	31	90APNP3036HAAP	V/F PWB Ass'y.	—
11	90APKY833605	Eye Cap Holder	AC	32	90APWA833601	Insulator Panel	AC
12	90APKY833606	Base	AD	33	90AXNG23FFZ	Nut	AB
13	90APKY833607	Bush	AC	34	90APU52064	No. Label	AA
14	90APKY833608	Push Lever	AC	35	90ATQF30104	High Voltage Caution Label	AB
15	90APKY833609	Shoe	AC				
16	90APKR833601	Bracket	AC	36	90APQF633603A	Caution Label II	AB
17	90APKM833601	Eye Cap	AF	37	90ATQF30105	Caution Label	AB
18	90APKR832902	Push Lever Spring	AB	38	90APQF63003601	Caution Label I	AC
19	90APKM833602	O Ring	AC				

CASSETTE HOUSING CONTROL PARTS



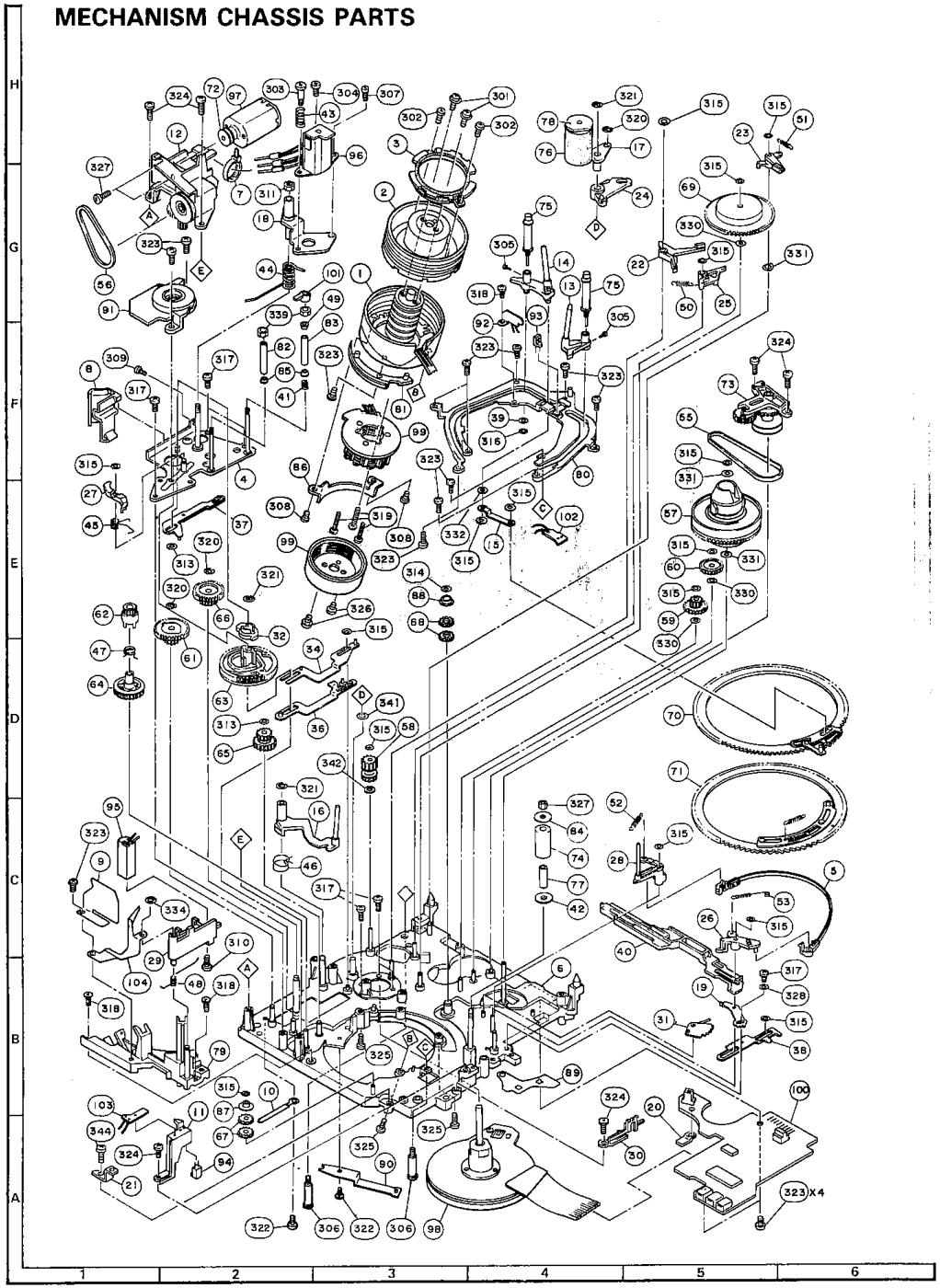
CASSETTE HOUSING CONTROL PARTS

Ref. No.	Part No.	Description	Price Code	Ref. No.	Part No.	Description	Price Code
	CHLDX3040GE04	Cassette Housing Control Ass'y	AY	9	MLiFV0011GEZZ	Damper	AG
				10	MSPRP0107GEFJ	Pressure Spring	AC
1	LANGF9330GEFW	Garage Reinforcement Panel (A)	AC	11	MSPRT0283GEFJ	Up Spring	AB
				12	MSPRT0263GEFJ	Lock Spring	AA
2	LANGF9331GEFW	Garage Reinforcement Panel (B)	AB	13	NRöLP0058GEZZ	Inner Arm Roller (L)	AA
				14	NRöLP0059GEZZ	Inner Arm Roller (R)	AA
3	LANGF9332GEFW	Side Panel (R)	AC	15	NRöLP0060GEZZ	Outer Arm Roller	AA
4	LANGF9333GEZZ	Side Panel (L)	AE	16	NSFTZ0049GEZZ	Main Shaft	AM
5	LHLDX3040GEZZ	Cassette Garage Ass'y	AM	17	QSW-F0029GEZZ	Cassette Down Switch	AC
6	MLEVF0274GEFW	Lock Lever	AB	18	QSW-Z0023GEZZ	Rec Tip Switch	AC
7	MLEVF0275GEFW	Ratch Lever	AB	19	NRöLP0061GEZZ	Lock Roller	AA
8	MLEVP0121GEZZ	Cassette Cover Lever	AB				

SCREWS, NUTS, WASHERS

Ref. No.	Part No.	Description	Price Code	Ref. No.	Part No.	Description	Price Code
301	LX-BZ3113GEFN	Screw	AA	323	XSPSD17P03000	Screw	AA
302	XSPSD14P04000	Screw	AA	324	XSPSD17P04000	Screw	AA
303	LX-BZ3077GEFD	Screw	AA	325	XSPSD17P05000	Screw	AA
304	LX-BZ3078GEFD	Screw	AA	326	XSPSD20P03000	Screw	AA
305	LX-BZ3079GEFF	Screw	AA	327	LX-NZ3039GEZZ	Nut	AA
306	LX-BZ3080GEFW	Screw	AA	328	XWHBZ18-02040	Washer	AA
307	LX-BZ3081GEFF	Screw	AA	329	XWHJZ16-01030	Washer	AA
308	LX-BZ3082GEFF	Screw	AA	330	XWHJZ16-02030	Washer	AA
309	LX-BZ3087GEFD	Screw	AA	331	XWHJZ16-05030	Washer	AA
310	LX-BZ3090GEFE	Screw	AA	332	XWHJZ17-02055	Washer	AA
311	LX-NZ3032GEZZ	Nut	AB	333	LX-BZ3084GEFD	Screw	AA
313	LX-WZ1005GE00	Washer	AA	334	LX-WZ1030GE00	Washer	AA
314	LX-WZ1006GE00	Washer	AA	335	LX-HZ3044GEFD	Screw	AA
315	LX-WZ1029GE00	Washer	AA	336	XWHJZ10-02030	Washer	AA
316	LX-WZ1032GE00	Washer	AA	337	XSPSD17P06000	Screw	AA
317	XAPSF17P03000	Screw	AA	338	XSPSD20P04000	Screw	AA
318	XAPSF17P04000	Screw	AA	339	LX-NZ3045GEZZ	Nut	AA
319	XAPSF17P11000	Screw	AA	340	LX-WZ1024GE00	Washer	AA
320	XRESJ15-04000	E-Ring	AA	341	XWHJZ31-05070	Washer	AA
321	XRESJ20-04000	E-Ring	AA	342	XWHJZ17-02045	Washer	AA
322	XSPSD17P02000	Screw	AA	343	XSPSN17P03000	Screw	AA
				344	LX-BZ3104GEFF	Screw	AA

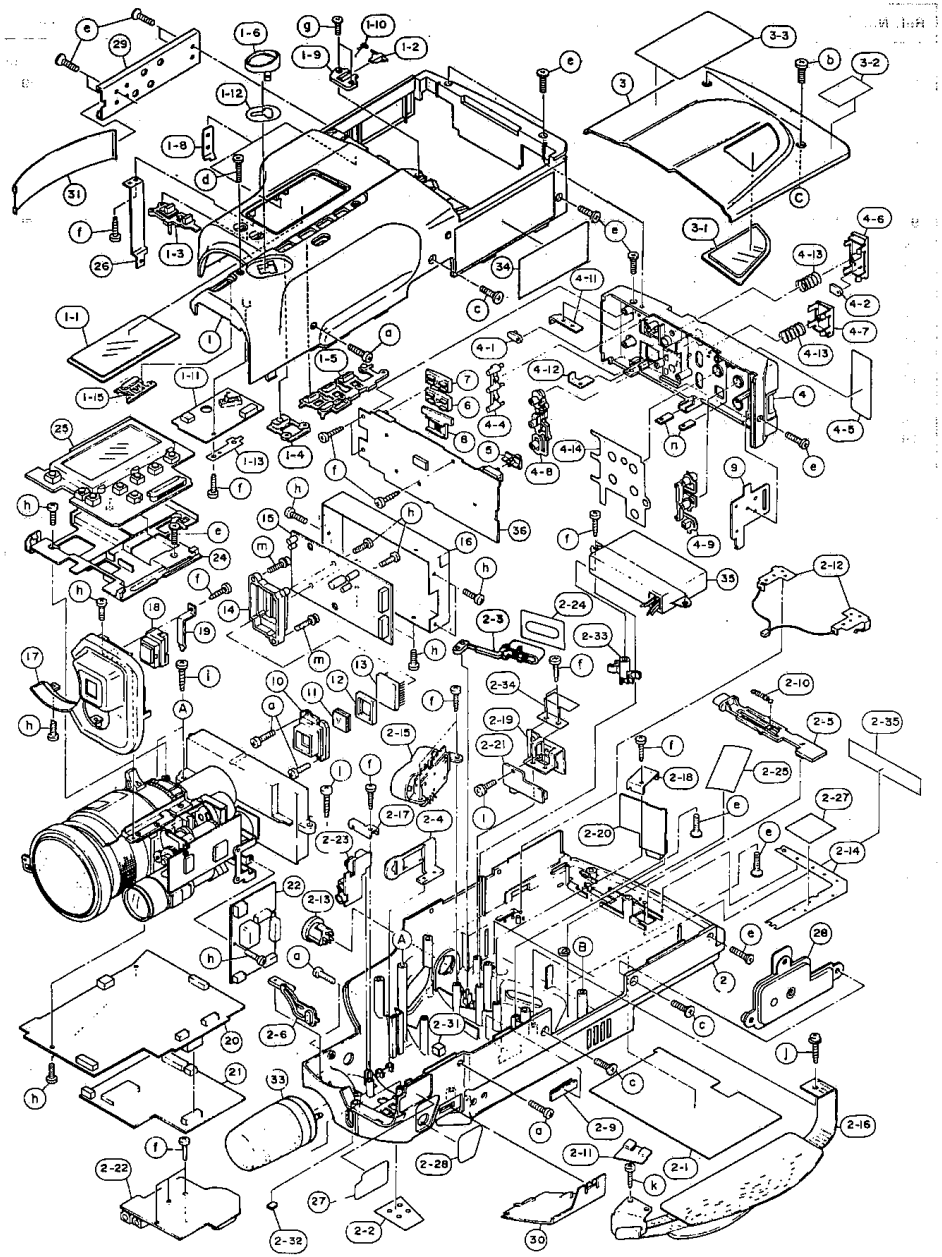
MECHANISM CHASSIS PARTS

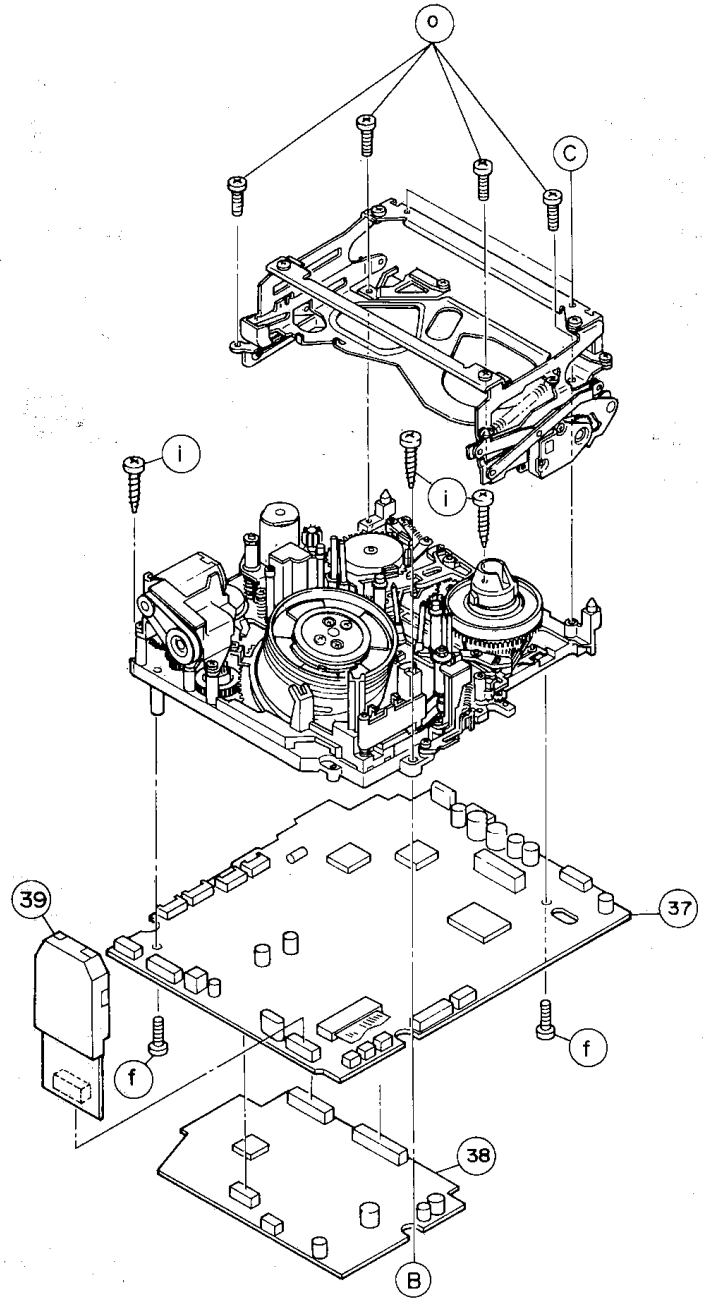


MECHANISM CHASSIS PARTS

Ref. No.	Part No.	Description	Code
1	DDRML0013HE00	Bottom Drum Ass'y	BG
2	DDRMU0011HE05	Upper Drum Ass'y	BP
3	NFLYV0065GEZZ	Dinamic Damper	AF
4	LANGF9366GEZZ	A/C Head Base Ass'y	AK
5	LBNDK3018GEZZ	Tension Band Ass'y	AD
6	LCHSM0099GEZZ	Main Chassis Ass'y	BB
7	LHLDW1070GEZZ	Nylon Band	AA
8	LHLDW1100GEZZ	Wire Holder	AA
9	LHLDW1106GEZZ	Head Amp F.P.C. Holder	AB
10	LHLDW9017GEZZ	Cord Cramp	AA
11	LHLDZ1621GEZZ	End Sensor Holder	AB
12	LHLDZ1623GEZZ	Loading Motor Holder Ass'y	AB
13	LPöLM0030GEZZ	Pole Base-A Ass'y	AK
14	LPöLM0031GEZZ	Pole Base-B Ass'y	AK
15	MARMM0064GEFW	Pole Base-B Lever	AA
16	MLEVC0019GEZZ	Slant Pole-C Arm Ass'y	AG
17	MLEVF0270GEZZ	Pinch Roller Lever Ass'y	AE
18	MLEVF0272GEZZ	A/C Head Arm Ass'y	AE
19	MLEVF0273GEFW	Tension Band Adjusting Lever	AB
20	LANGA0056GEFW	Capstan Motor Bracket	AC
21	LANGT9112GEFW	Head Amp. Bracket	AB
22	MLEVP0109GEZZ	VS-R Brake Ass'y	AB
23	MLEVP0110GEZZ	Rewind Sub-Brake Ass'y	AB
24	MLEVP0111GEZZ	Change Lever	AA
25	MLEVP0112GEZZ	K-Grear, S-Lever	AA
26	MLEVP0113GEZZ	Tension Band Base	AA
27	MLEVP0114GEZZ	Slant Pole-C Pinch Lever	AA
28	MLEVP0115GEZZ	Tension Arm	AD
29	MLEVP0116GEZZ	Full Erase Head Arm	AB
30	MLEVP0118GEZZ	Tension Arm Spring Lever	AA
31	MLEVP0120GEZZ	Eject Change Lever	AA
32	MLEVP0122GEZZ	Slant Pole-C Pinch Cam	AA
34	MSLiF0034GEZZ	Main Shifter Operation Panel Ass'y	AE
36	MSLiF0046GEZZ	Slant Pole-C Arm Lever Ass'y	AG
37	MSLiF0037GEZZ	Pinch Operation Lever Ass'y	AE
38	MSLiF0038GEFW	Eject Slider	AB
39	MSLiF0039GEFW	Slider	AA
40	MSLiP0002GEZZ	Main Shifter	AB
41	MSPRC0129GEFJ	Retaining Guide Spring	AA
42	PGiDS0026GEFW	Supply Impedance Roller Flange (B)	AB
43	MSPRC0131GEFJ	A/C Head Spring	AA
44	MSPRC0132GEFJ	A/C Head Arm Spring	AA
45	MSPRD0080GEFJ	Slant Pole-C Arm Pinch Spring	AA
46	MSPRD0081GEFJ	Slant Pole-C Arm Spring	AA
47	MSPRD0082GEFJ	Reciprocating Gear Spring	AA
48	MSPRD0083GEFJ	Full Erase Head Arm Spring	AA
49	PGiDS0025GEFW	Guide Flange (B)	AB
50	MSPRT0285GEFJ	VS-R Brake Spring	AB
51	MSPRT0258GEFJ	Rewind Sub-brake Spring	AA
52	MSPRT0266GEFJ	Tension Arm Spring	AA
53	MSPRT0260GEFJ	Tension Band Base Spring	AA
55	NBLTK0053GE00	Drive Belt	AB
56	NBLTK0054GE00	Loading Belt	AB
57	NDAiV1044GEZZ	Reel Disk Ass'y	AG
58	NGERH1143GEZZ	Rewind Gear	AA
59	NGERH1095GEZZ	Slowing Down Gear	AA
60	NGERH1096GEZZ	Relay Gear	AB
61	NGERH1097GEZZ	Master Cam Drive Gear	AD
62	NGERH1098GEZZ	Reciprocating Gear	AA
63	NGERH1099GEZZ	Master Cam	AC
64	NGERH1101GEZZ	Loading Ring Drive Gear (A)	AA
65	NGERH1102GEZZ	Loading Ring Drive Gear (B)	AA
66	NGERH1103GEZZ	Loading Gear	AD
67	NGERH1104GEZZ	L Ring Gear (A)	AA
68	NGERH1105GEZZ	L Ring Gear (B)	AA
69	NGERH1106GEZZ	Limiter Ass'y	AE
70	NGERH3033GEZZ	L Ring Ass'y (A)	AH
71	NGERH3034GEZZ	L Ring Ass'y (B)	AH
72	NPLYV0123GEZZ	Loading Motor Pulley	AA
73	NPLYV0124GEZZ	Drive Unit	AF
74	NRöLP0056GEZZ	Supply Impedance Roller	AD
75	NRöLP0055GEZZ	Guide Roller	AG
76	NRöLR0019GEZZ	Pinch Roller	AP
77	NSFTL0563GEFW	Supply Impedance Roller Inner	AC
78	PCöVP1016GEZZ	Pinch Roller Cap	AA
79	PGiDC0036GEZZ	Base Stopper Ass'y	AL
80	PGiDM0071GEZZ	Guide Rail	AC
81	PGiDM0059GEZZ	Pole Base-B Guide	AB
82	PGiDS0024GEFW	Retaining Guide (A)	AC
83	PGiDS0020GEFW	Retaining Guide (B)	AC
84	PGiDH0031GEFW	Supply Impedance Roller Flange	AA
85	PGiDS0022GEFW	Guide Flange	AB
86	LHLDW3004GEFW	FPC Holder	AC
87	PSPAZ0136GEZZ	L Ring Washer (A)	AA
88	PSPAZ0137GEZZ	L Ring Washer (B)	AA
89	PZETV0324GEZZ	Shield Panel	AA
90	QBRSK0019GEZZ	Ground Brush	AC
91	QSW-R0024GEZZ	Mecaposition Switch	AH
92	RDTCH0027GEZZ	Dew Sensor Ass'y	AG
93	RH-PX0152GEZZ	End LED	AC
94	RH-PX0153GEZZ	End Sensor	AD
95	RHEDT0024GEZZ	Full Erase Head	AP
96	RHEDU0060GEZZ	A/C, A/E Head Ass'y	AW
97	RMöTM1051GEZZ	Loading Motor	AQ
98	RMöTN2030GEZZ	Capstan DD Motor	BD
99	RMöTP1101GEZZ	DD Drum Motor	AX
100	RUNTK0562GEN1	Mechanism Relay P.W.B.	BC
101	PCAPS1019GEZZ	Tape Guide	AA
102	QPWBF2461GEZZ	LED PWB	AA
103	QPWBF2462GEZZ	End Sensor PWB	AA
104	MSPRP0109GEFJ	Pole Base-A Guide	AC

CABINET PARTS

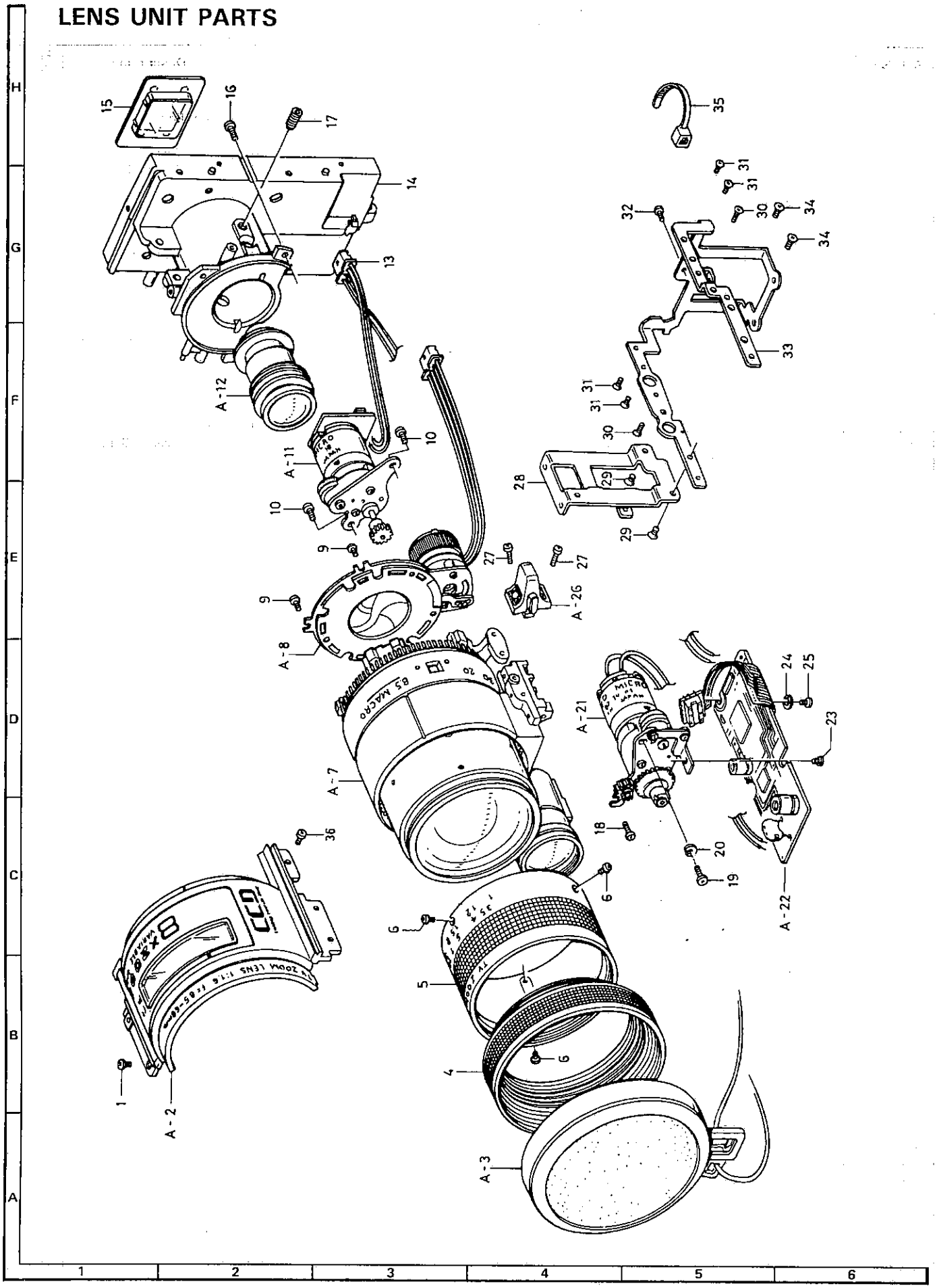




CABINET PARTS

Ref. No.	Part No.	Description	Price Code	Ref. No.	Part No.	Description	Price Code
1	CCABA6045TA01	Cabinet Ass'y (A)	AX	4-14	PSPAH0008TA00	Button, Spacer	AB
1-1	GMADi 0009TASA	LCD Window	AD	5	JKNBK0109TASB	Knob, Edit	AB
1-2	JBTN-0071TA00	Button, Tape Guide	AB	6	JKNBK0110TASA	Knob, Power	AB
1-3	JBTN-0139TASA	Button, Counter	AB	7	JKNBK0110TASD	Knob, Cassette Eject	AB
1-4	JBTN-0140TASA	Button, Full Auto	AB	8	JKNBK0111TASB	Knob, Camera REC/VTR PB	AC
1-5	JBTN-0141TASA	Button, Operation	AC				
1-6	JBTN-0142TASA	Button, Fade	AB	9	LANGT0403TA00	Belt Bracket (A)	AE
1-8	LANGK0228TAFW	Shoe Retaining Bracket	AC	10	LHLDZ1084TA00	Crystal Frame	AB
1-9	LHLDZ1068TA00	Tape Guide Holder	AB	11	PFiLW0043TAZZ	Crystal	BC
1-10	MSPRD0010TAFW	Tape Guide Spring	AA	12	PCõVM8010TA00	Crystal Protection Rubber	AB
1-11	DUNTK2118TA01	Fade PWB Unit	—				
1-12	PCõVP9031TAZZ	Spacer	AA	13	VHiLZ2121JA1E	CCD Image Sensor (IC104)	BX
1-13	QEARP0124TAZZ	Ground Panel	AC		or		
1-15	JBTN-0145TASA	Button, Backlight Compensation	AB		VHiLZ2121//-1		BZ
				14	LHLDZ3035TAFW	CCD Image Sensor Base	AH
2	CCABB6030TA04	Cabinet Ass'y (B) (VL-C670S/H) (VL-C6100E)	BM	15	DUNTK2183PM00	Sensor PWB Unit	—
					or		
	CCABB6030TA05	Cabinet Ass'y (B) (VL-C670H)	BM		RUNTK0204TAN1		
				16	PSLDM3094TAFW	Sensor PWB Shield Case	AC
2-1	HiNDP0134TASA	Battery Eject Cover	AF	17	GCõVA1177TASB	A/F Front Cover	AE
2-2	HiNDP0110TASA	Calendar Indication Panel	AF	18	RUNTK0179TAZZ	White Balance Sensor	AZ
2-3	JBTN-0095TASB	Button, VCR S/S (A)	AB		or		
2-4	JBTN-0096TASB	Button, VCR S/S (B)	AB		RUNTK0261TAZZ		AZ
2-5	JBTN-0097TASA	Button, Battery Eject	AC	19	LANGK0249TAFW	White Balance Sensor Bracket	AA
2-6	JBTN-0098TASA	Button, Self Timer	AB				
2-9	LHLDW1026TAZZ	Wire Holder	AB	20	DUNTK2184PM00	Signal Process/Auto Wite PWB Unit	—
2-10	MSPRT0020TAFW	Battery Eject Spring	AB		or		
2-11	PZETV0213TAZZ	Hand Strap Insulator	AC		RUNTK0205TAN1		
2-12	QCNW-4843GEZZ	Battery Terminal (W/Leads)	AF	21	DUNTK2185PM00	Encoder PWB Unit	—
					or		
2-13	QCNW-5730GEZZ	V/F Connector Leads	AL		RUNTK0206TAN1		
2-14	QEARP0111TAFW	Ground Panel	AB	22	DUNTK2186PM00	SSG PWB Unit	—
2-15	QSW-Z0020TAZZ	Zoom Switch	AQ		or		
2-16	UBNDT0029TASA	Hand Strap	AR		RUNTK0207TAN1		
2-17	LANGK0248TAFW	Mic. PWB Bracket	AA	24	LHLDZ1087TAZZ	LCD Unit Holder	AC
2-18	LANGK0251TAFW	VTR S/S PWB Bracket	AA	25	RUNTK0602GEZZ	LCD Unit (VL-C670S/H) (VL-C6100E)	—
2-19	LANGT0402TA00	Band Bracket (B)	AE				
2-20	DUNTK2129TA00	VTR S/S PWB Unit	—	25	RUNTK0614GEZZ	LCD Unit (VL-C670X)	—
2-21	DUNTK2120TA00	R/C PWB Unit	—	26	LANGK0247TAFW	Cabinet Retaining Bracket	AB
2-22	DUNTK2121TA01	L! Battery PWB Unit	—				
2-23	DUNTK2122TA00	Mic. PWB Unit	—	27	GCõVA1176TA00	A/F Adjustment Cover	AA
2-24	PSPAH0009TA00	Spacer (VCR S/S Button)	AA	28	GDAi-1023TA00	Tripod Mounting Base	AD
2-25	PCõVM9001TAZZ	Mesh Cover	AB	29	GDAi-3039TA00	Shoe	AF
2-27	PZETV0214TAZZ	Insulator (A)	AB	30	GFTAB1027TASD	Calendar Cover	AC
2-28	HDECP0029TA00	Cabinet (B) Button Cover	AD	31	MSPRP0077TA00	Shoe Spring	AE
2-31	PMLT-0081TAZZ	PWB Holder Rubber	AA	33	RMiCC0026TAZZ	Microphone	AS
2-32	HDECP0030TA00	Cabinet (B) Hole Cover	AA	34	TLABM1323TAZZ	Model Label (VL-C670S)	AB
2-33	LBõS-0027TAZZ	Cabinet Bos	AB		TLABM1324TAZZ	Model Label (VL-C670H)	AB
2-34	PZETV0224TAZZ	Insulator	AB		TLABM1325TAZZ	Model Label (VL-C670X)	AB
2-35	TCAUS0365TAZZ	Caution Label (VL-C670H)	AB		TLABM1326TAZZ	Model Label (VL-C6100E)	AB
				35	RCNVD0007TAZZ	Power Unit	BC
3	CFTAC1073TA01	Cassette Cover Ass'y (VL-C670S/H/X)	AN	36	DUNTK2915HE01	Operation PWB Unit	—
				37	DUNTK3001HE07	VTR Main PWB Unit	—
	CFTAC1074TA01	Cassette Cover Ass'y (VL-C6100E)	AQ	38	DUNTK3002HE01	Y/C PWB Unit	—
				39	DUNTK2916HE04	Head Amp P.W.B. Unit	—
3-1	GMADC0015TASA	Cassette Window	AC	a	LX-BZ0143TAFB	Screw	AA
3-2	TLABH0138TAZZ	Push Label	AA	b	XBBSF20P05000	Screw	AA
3-3	TLABZ0177TAZZ	Features Label	AF	c	XBSSF26P05000	Screw	AA
4	CPNLC6011TA03	Operation Panel Ass'y	AU	d	XSPSF20P11000	Screw	AA
4-1	GCõVA1172TAZZ	Power LED Cover	AB	e	XSSSF20P05000	Screw	AA
4-2	GCõVA1173TAZZ	PB LED Cover	AB	f	XEPSB20P06000	Screw	AA
4-4	GCõVA1175TAZZ	FF REW LED Cover	AB	g	LX-HZ0004TAFF	Screw	AA
4-5	HDECP0027TASA	Panel Button Cover	AC	h	LX-BZ3130CEFD	Screw	AA
4-6	JBTN-0112TASC	Button, PB	AC	i	XEPSD26P12000	Screw	AA
4-7	JBTN-0113TASC	Button, STOP	AC	j	LX-HZ0005TAFD	Screw	AA
4-8	JBTN-0102TASB	Button, FF, REW, Pause	AB	k	XEBSF23P06000	Screw	AA
4-9	JBTN-0103TASB	Button, REC Check	AB	l	XHPSD20P04WS0	Screw	AA
4-11	LANGT0404TAFW	Panel Bracket (A)	AC	m	LX-BZ0169TAFD	Screw	AA
4-12	LANGT0405TAFW	Panel Bracket (B)	AC	n	LX-NZ0067TAFW	Screw	AA
4-13	MSPRC0043TAFW	Button, Spring	AA	o	XSPS320P04000	Screw	AA

LENS UNIT PARTS



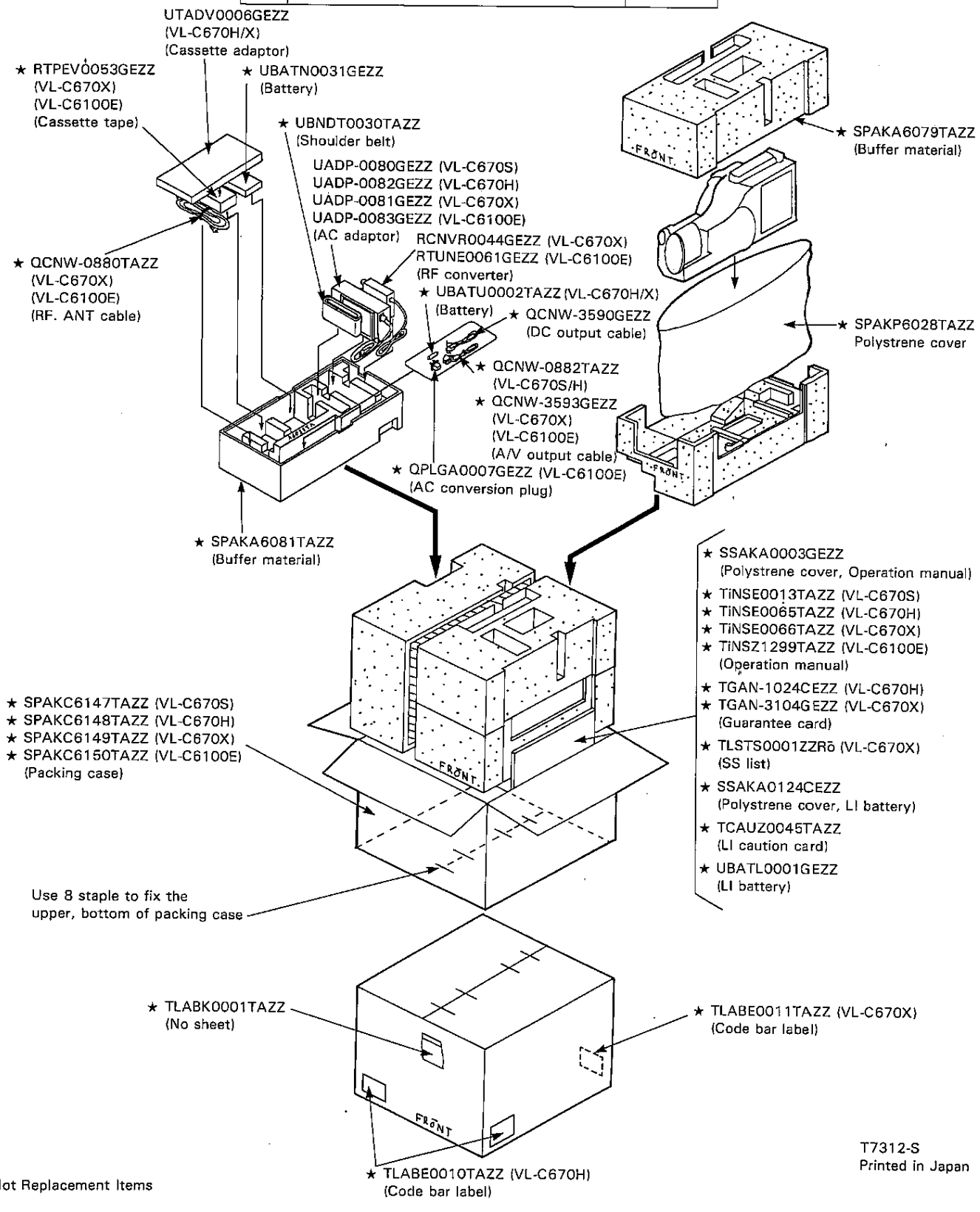
LENS UNIT PARTS

Ref. No.	Part No.	Description	Price Code	Ref. No.	Part No.	Description	Price Code
	CLNS-0083TA04	Lens Unit Ass'y.	CF	19	99JWBTP174535B	Screw	AA
1	99JWBF203030B	Screw	AB	20	99JLPWSWM17	Washer	AA
A-2	99JLB481715	Cover Ass'y.	AR	A-21	99JLPWB817124	Auto Focus Motor Ass'y.	BD
A-3	99JLPWB817120	Hood cap Ass'y.	AH	A-22	99JLPWB817203	Auto Focus PWB Ass'y.	BS
4	99JLPWB817115	Lens Hood	AK	23	99JWBP202530Ni	Screw	AA
5	99JLPWB817110	Focus Ring	AP	24	99JLPWSWM20	Washer	AA
6	99JWP172025BC	Screw	AB	25	99JWBP202530Ni	Screw	AA
A-7	99JLPWB817122	Zoom Lens Ass'y.	BZ	A-26	99JLPWB817123	Zoom Lever Ass'y	AD
A-8	99JLPWZ816510	Auto Iris	BC	27	99JBTP174025BC	Screw	AB
9	99JWP173025Ni	Screw	AB	28	99JLPWB817107	Cover Retaining Bracket (2)	AF
10	99JWP174035Ni	Screw	AB				
A-11	99JLPW816139	Zoom Motor Ass'y.	BB	29	99JWF202030Ni	Screw	AB
A-12	99JLPW816411	Master Lens Ass'y.	BF	30	99JWBTF174025B	Screw	AB
13	99JLPWB817118	Connector (4 Pin Connector W/Leads)	AE	31	99JWF172525Ni	Screw	AB
				32	99JWP173025Ni	Screw	AB
14	99JLPW817102	Master Chassis Ass'y.	AT	33	99JLPWB817106	Cover Retaining Bracket (1)	AQ
15	99JLPW816138	Lens Back Cap	AB				
16	99JWP205035Ni	Screw	AB	34	99JBBTF203030B	Screw	AB
17	99JLPW816135	BF Retaining Screw	AB	35	99JLPW816145	Wire Holder	AB
18	99JBTP174025Ni	Screw	AA	36	99JWBP203030B	Screw	AA

PACKING OF THE SET

• **Setting positions of the Knobs**

CAMECORDER	Focusing Ring Position	∞
	Zoom Lever Position	Tele
	Auto Focus Selector SW Position	Auto
	White Balances Selector Position	Auto
	Tracking Control Position	Center
	Power SW Position	OFF



★ Not Replacement Items

T7312-S
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